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Poirieria

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POIRIERIA



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CONCHOLOGY SECTION
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P O I R I E R I A

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BALCIS (PICTOBALCIS) ARTICULATA (Sowerby)

While the shells of our small, very slender species of the genus Balcis are invariably white - sometimes porcellanous and sometimes glossy - we seem to have gained fairly recently a species which is delightfully different. This is Pictobalcis articulata, first recorded from New South Wales, and now not infrequently collected in beach drifts from Cape Maria to at least as far South as Whangaruru. The first examples recorded in New Zealand were collected in 1971. The subgenus was apparently erected to contain those species which sport a colour pattern, and articulata has a very pleasing one - a central band of chestnut from which narrow chevrons extend from both sides, reaching almost to the sutures,



= Size of Cape Maria
specimen..

while from each varix runs a vertical stripe on the base of the shell. Ground colour is porcellanous white.

The largest examples I have seen came from Cape Maria van Diemen and measured just over 30mm x 7.5mm, which is considerably larger than the type specimen from Australia.

The molluscs belonging to this genus are parasitic - mostly on echinoderms, but we do, in fact, know very little about the hosts of our own New Zealand species, most of which are no more than 5 or 6 mm in length.

* * * *

A NOTE ON DREDGING OFF TOLAGA BAY

R. M. Lee

On a recent dredging trip off Tolaga Bay, where I live, I hopefully tried a new location about four miles offshore in 26 - 28 fathoms on mud and sand bottom. Results, however, were very poor, with only two small valves of Neilo australis, one Proxiuber and a bit of shingle to show for my trouble. So, after being almost run over by the vessel UNION MELBOURNE, I decided to try one of my old stations where previously I have had considerable success. This is about three-quarters of a mile offshore in a sand channel between hard rock and Bryozoan bottom in 15 to 18 fathoms.

On my first try I missed the sand and ended up in the rocks, so up came the dredge again and a move of a few yards was made. The second time was a success and I dredged for about 200 yards before hitting rock. Now there was a fair weight in the dredge and up came one of my best hauls.

1 *Aeneator compta*
 2 *Monodilepas monilifera*
 cookiana
 4 *Poirieria zelandica*
 1 *Herpetopoma laochei*
 1 *Odostomia acutangula*
 8 *Phenatoma novaezelandiae*
 and 1 *P. zealandica*
 1 *Gari lineolata* (alive)
 3 *Buccinulum colensoi*
 and several *Tellinella h. huttoni*, *T. h. sterrha*, *Neoguraleus amoenus*, *Scalpomactra scalpellum*, *Linucula gallinacea*,
Myadora boltoni (alive) and many more, making in all 53
 species that I have identified.

10 *Cominella excoriata*
 foliagaensis
 3 *Maurea osborni*
 About 50 *Cylichna thetids*

1 *Liratilia conquista*
 1 *Marginella mustelina*
 2 *Axymene aucklandicus*
 4 *Aoteadrilla wanganuiensis*
 wanganuiensis

The majority of the gastropods were dead and housing hermit crabs, while the bivalves were alive. This seems to be the rule in this area. The closer I can get to rough bottom, the better the results, too.

THE LAND MOLLUSCA OF MT WELLINGTON LAVA FIELDS
- TODAY and YESTERDAY

N.W.G.

Those whose interest lies in our small native land snails will have, no doubt, often read in Suters Manual the locality record "Mt Wellington lava fields". Little thought is now given to that area, but Henry Suter spent quite a time collecting there before writing his Manual in 1913, and a fair number of species are listed by him. But what of the area today? While, no doubt, quite extensive in Suter's time - possibly extending from Mt Wellington to Penrose and with a fair coverage of native vegetation - this rugged terrain of piled scoria blocks and pits has now been drastically reduced to fill the needs of housing and industry. Now only a small remnant remains, as far as we can determine, at the end of Herbert Road, Mt Wellington.

Although only a few acres in extent, the vegetation is dominated by various introduced plants, with only a few natives persisting down in damper scoria pits below the general ground level. Small Titoki and Karaka and some Pigeon-wood were noted. Astelia and ferns were more prevalent - possibly this remnant has been burnt over at times as no trees of any size were seen.

Seventeen species of small land snails were recorded from Mt Wellington by Suter in his Manual and these are listed below:

| | |
|--|---|
| <i>Thalassohelix ziczag</i> (Gould) | <i>Charopa angiculus</i> (Reeve) |
| <i>Therasia celinde</i> (Gray) | <i>Charopa buccinella</i> (Reeve) |
| <i>Therasia tamora</i> (Hutton) | <i>Laoma marina</i> (Hutton) |
| <i>Phenacohelix ponsonbyi</i> (Suter) (type locality) | <i>Laoma conella</i> (Pfr.) |
| <i>Flammulina chiron</i> (Gray) | <i>Laoma erigone</i> (Gray) |
| <i>Flammulina pilosryi</i> (Suter) | <i>Laoma glabrimusculus</i> (Pfr.) |
| <i>Ptychodon tau</i> (Pfr.) | <i>Laoma moellendorffii</i> (Suter) |
| | <i>Paralaoma lateumbilicata</i> (Suter) |
| | <i>Paralaoma pumila</i> (Hutton) |

Such an assemblage of species suggests a reasonably heavily wooded area. The following species are existing at the present time in this small area of much modified ground cover, and usually under scoria blocks or where a small amount of leaf litter has gathered between them.

Most of these records are those of J. Goulstone, supplemented by the results of a field trip by the Conchology Section in September 1976.

| | |
|--|---|
| <i>Liarea egea</i> (Gray) 2 | <i>Subflectola caputspinulae</i> (Reeve) 4 |
| <i>Cytoria cytora</i> (Gray) | |
| <i>Thalassohelix zelandiae</i> 9 | <i>Laoma leimonias</i> (Gray) 2 |
| <i>Suteria ide</i> (Gray) 3 | <i>Laoma (Phrixgnathus) erigone</i> (Gray) 3 |
| <i>Phenacohelix giveni</i> Cumber 25 | <i>Laoma (Phrixgnathus) moellendorffii</i> (Suter) 2 |
| <i>Phenacohelix pilula</i> (Reeve) 1 | <i>Laoma (Phrixgnathus) sublucidus</i> (Suter) 4 |
| <i>Therasiella celinde</i> (Gray) 1 | <i>Laoma (Phrixgnathus) transitans</i> (Suter) |
| <i>Charopa coma</i> (Gray) 2 | <i>Paralaoma lateumbilicata</i> (Suter) 1 |
| <i>Mocella eta</i> (Pfr.) 2 | <i>Delos coresia</i> (Gray) 1 |
| <i>Ptychodon pseudoleioda</i> (Suter) 2 | <i>Tornatellinops novoseelandica</i> (Pfr.) 2 |
| <i>Ptychodon tau</i> (Pfr.) 1 | |

* * * *

THE BRACHIOPODS OF STEWART ISLAND

R. C. Willan

I make no apologies for giving this title to an account of the molluscs I collected at Stewart Island because it was only through a brachiopod survey funded by National Geographic Magazine that I was able to visit Stewart Island in February 1977. So I'll give the brachiopods their due by mentioning them in the title and then not discuss them further here because theirs is a separate story.

I had as company on the Paterson Island Expedition an assorted bunch of Australian and New Zealand marine biologists and oceanographers - as good company and entertainment as one could hope to find anywhere. Our floating home for eight days was R.V. ACHERON and on board the accommodation was five star standard, so excellent that one of the party quoted "Acheron Hotel" when asked where he had made his airline reservations. ACHERON is skippered by Captain Alex Black, a name no doubt familiar to shell collectors from his ALERT days and honoured in such molluscan combinations as Alertalex blacki, Maurea blacki, Laoma blacki and Cominella alertae.

The entire survey was done at Paterson Inlet, that very large harbour that is sliced out of the north eastern side of Stewart Island and serves as the focus of life for all Stewart Islanders. We came to know the inlet with its bush-fringed bays and islands very well during this expedition because the programme called for a survey of as many different sites as

possible. And survey we did, by dredging and diving we worked 38 stations extending from the eastern side of Native Island and Anglem Point at the entrance back to North Arm and South West Arm located near to the hilly, forest-covered centre of Stewart Island.

Besides accommodation, ACHERON's next attribute is its dredge - the most efficient I have seen in use. In combination with the Captain's knowledge, a tow of only one and a half minute's bottom time always came up full of material, so full in fact that it was sometimes necessary to literally shovel part of the haul overboard to enable us to find the sorting table so that we could wash and search through the rest. Stations worked on muddy bottoms such as at the entrance to South West Bay (= Big Glory Cove) and in Glory Cove itself were probably the most rewarding in molluscan terms. Diving was difficult in these areas because of the clouds of sediment stirred up as we worked, the lack of current to remove this sediment and also because most of the molluscs were buried anyway. Where there is limited mud brachiopods dominate, in muddier areas both brachiopods and Chlamys gemmulata suteri occur commonly together, but a touch more silt tilts the balance to the Chlamys' favour and in the upper reaches even Chlamys does not occur. Other molluscs living in these muddy habitats were Cominella nassoides nassoides, Buccinulum pertinax pertinax, Glaphyrina sp., Monodilepas monilifera monilifera, Euthrenopsis otagoensis, Uberella vitrea, Pleurobranchaea maculata, Diplodonta rakiura, Maorikellia rotunda, Cuspidaria trailli, Tellinella huttoni, Thyasira resupina mozelanica, Anthochiton canaliculata and Craspedochiton rubiginosus.

Areas in which silt is removed by currents to leave a sandier bottom were found to be best sampled by diving. Some such areas are the channel off the eastern tip of Ulva Island, northern side of Ulva Island and northern side of Native Island. Here there is a less spectacular assemblage dominated by Tawera spissa and Pecten novae-zelandiae rakiura, with other less numerous molluscs being Nemocardium pilchellum, Gari lineolata, Notocorbula zelandica, Thracia vitrea, Atrina pectinata zelandica and Alcithoe swainsoni. Dead bivalve shells with large drill holes were conspicuous everywhere; at first I accused Tanea zelandica of this predation, but I later observed the real culprit in action - Xymene ambiguus. Tanea was here, nevertheless, as evidenced by its numerous circular egg masses full of agglutinated sand grains. The midget octopus Robsonella australis turned up quite often in dredges made in these sandy areas and on one occasions I spied a devoted little mother Robsonella guarding her brood of eggs inside the concave half of a scallop shell right in the middle of the chaos of a dredge sample. She was carefully put into a bucket whereupon some of the babies started to

hatch and swim straight to the surface. By next morning she was still tending the unhatched eggs in the bucket, so I returned mother plus eggs plus scallop back to the sea.

Rocky areas had to be sampled by diving, and in shallow water, swimming through these swaying forests, like tall kauri trees, of Macrocystis algae was a fascinating experience, but progress was slow as you inevitably became tangled in Macrocystis. In the dark waters below this kelp forest live the very large Haliotis iris, H. australis and Modelia granosa for which Stewart Island is renowned, also Eudoxochiton nobilis, Maurea punctulata stewartiana, Monia zelandica and Cardita aoteana. Dense beds of the ribbed mussel (Aulacomya maoriana) occur in deeper water where the Macrocystis begins to thin out. Macrocystis was not found growing deeper than 10 metres in Paterson Inlet itself and below this algal cut off depth diving is a greater pleasure. In areas where rocks project from a scoured bottom of shell grit are Buccinulum pertinax pertinax, Cabestana spengleri, Argobuccinum tumidum and Astraea heliotropium. After observing living Astraea in such rocky habitats of strong currents it occurred to me that the saw-tooth like projections around the keel of the shell create a stabilising basal flange which helps to produce a non-turbulent flow of water over the shell and so greatly reduces the chances of an Astraea being dislodge and washed away by the current.

One unusual area was in 30 metres in the channel between Ulva Island and Grouper Rock. Here the substrate was of sand but with large clumps of "rock" made up of masses of consolidated dead tubes of polychaete worms (Pomatoceros terraenovae), forming hard ground up to half a square metre in area. Growing on these "rocks" was a magnificent flower garden of encrusting organisms - sponges, ascidians, red algae and hydroids with Lima zelandica and Chlamys dieffenbachi both bysally attached. Aulacomya maoriana was present as well, this mussel being found on such hard bottoms right down to 40 metres.

The busy survey programme on board ACHERON unfortunately did not permit much time for shore leave when I could hunt for molluscs intertidally. But several times while at anchor for the night in Golden Bay I made straight for the rocky shores. Here the intertidal boulders were partly stable and had some striata and the isopod Ligia novaezelandiae, whilst under stones between mid- and low-tide levels were Diloma zelandica, Anisodiloma bicanaliculata lenior, Xymene aucklandicus, Notoacmea daedala, large Acanthochitona zelandica amplificata, Buccinulum vittatum littorinoides and Lepisithais lacunosus.

On another occasion I was rowed ashore to the small cove at the south eastern end of Native Island - a much more exposed situation with a high proportion of unconsolidated boulders reminiscent of the Taranaki coastline. At mid-tide level were Cellana strigilis redimiculum, C. ornata, Melagraphia aethiops and Siphonaria spp., whilst beneath low-tidal stones were large numbers of Haliotis iris, some H. australis and two real southerners amongst the smaller gastropods - Zemitrella sulcata and Margarella rosea.

* * *

SNAILS IN LE ROY'S BUSH

NORTHCOTE, AUCKLAND CITY

H. Spencer

Some members travelling up Onewa Road, Northcote, on Auckland's North Shore, will have noticed a sign on the left that reads "Le Roy's Bush Scenic Reserve" and may have wondered what snails live there. To my knowledge, no one has gone further than that for a long time - perhaps not even since Suter collected in that locality.

So, one Sunday afternoon last August, I decided to see what was there. It proved to be a rich area with numerous individuals representing a good range of species. However, the small size of this native bush remnant is being reduced even further by pine trees encroaching upon it and the future is uncertain. The small area, too, also makes it very susceptible to over-collecting.

Here is a list of the species found in half an hour's search and in a bag of leaf mould taken home.

| | |
|---|---|
| <i>Cyrtora torquilla</i> (Suter) | <i>Charopa</i> (<i>Ptychodon</i>) <i>buccinella</i> (Reeve) |
| <i>Cyrtora cytora</i> (Gray) | <i>Laoma</i> (<i>Laoma</i>) <i>poecilosticta</i> (Pfr.) |
| <i>Cyrtora hedleyi</i> (Suter) | <i>Laoma</i> (<i>Phrixgnathus</i>) <i>ariel</i> Hutton |
| <i>Allodiscus granum</i> (Pfr.) | <i>Laoma</i> (<i>Phrixgnathus</i>) <i>fulgoratus</i> (Suter) |
| <i>Allodiscus planulatus</i> (Hutton) | <i>Laoma</i> (<i>Phrixgnathus</i>) <i>c.f. elevatus</i> ? |
| <i>Allodiscus dimorphus</i> (Pfr.) | <i>Laoma</i> (<i>Phrixgnathus</i>) |
| <i>Phenacohelix ponsonbyi</i> (Suter) | <i>moellendorffii</i> (Suter) |
| <i>Tornatellinops</i> <i>novo eelandica</i> (Pfr.) | <i>Laoma</i> (<i>Phrixgnathus</i>) . . <i>c.f. viridulus</i> ? |

Therasiella neozelanica Cumber Obanella rimutaka Dell
Paralaoma pumila (Hutton) Delos jeffreysiana (Pfr.)
 Cionella lubrica (introduced)

* * * *

NOTES ON LOCAL VERMETIDAE

Serpulorbis Sasso 1827, Novastoa Finlay 1927,
Dendropoma March 1861, Stephopoma Moerch 1860

N.W. Gardner

Molluscs which kindly produce a shell of regular shape are quite a help to amateur conchologists, but there are a few less considerate families which are far from co-operative and Serpulorbis is one of these. At a glance they seem to be just a length of shell tubing, very twisted, distorted and of no particular shape, although some do have a weak "corkscrew" inclination.

The vermetids of the genus Serpulorbis live cemented to a hard surface, or in some species embedded in encrusting coralline algae with 10 - 15mm of shelly tube showing. They range from between tides to quite considerable depths. There is no operculum, but the "plug" of the foot is usually vividly coloured. The foot contains a large mucous gland from which long threads can be extended to act as plankton traps, supplementing the ciliary food collecting by the gill.

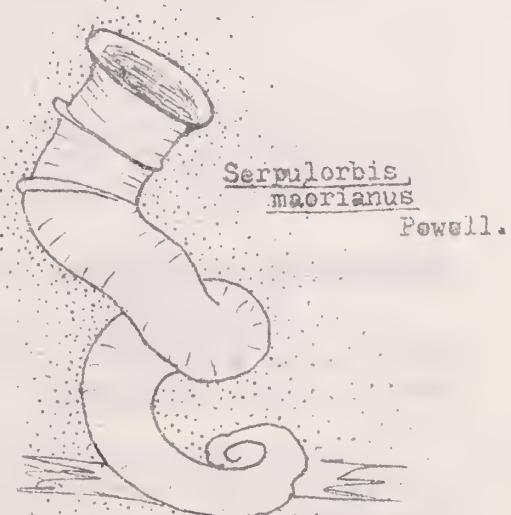


Serpulorbis zelandicus
(Q & G.).

We have in New Zealand three species. One is common and frequently seen at mid to low tide level cemented to a rocky surface or under rocks. Examples of this species, Serpulorbis zelandicus Q & G, are often cast ashore attached to holdfasts of kelp wrenched from the sea bed during storms, eg Takapuna. The shell is very irregular and no two examples are anything alike. They are usually a brownish colour with some fairly prominent longitudinal sculpture. In older shell books you could find this species listed as Serpulorbis siphon Lam. The foot is usually orange/red, but can be a yellowish colour. (It occurs throughout New Zealand).

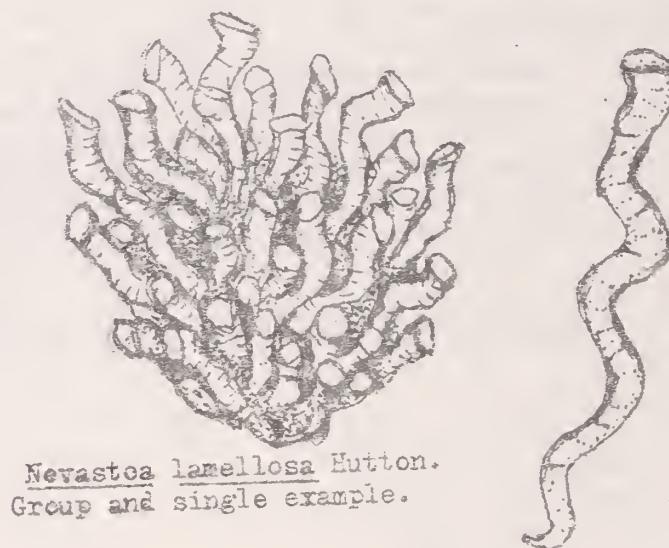
In 1951 J. E. Morton described another species which lives at low tide level along with the previous species. This is S. aotearoicus, which is said to closely resemble zelandicus in shell characters but tends to be a darker brown in colour. There is, however, a distinct difference in the colour of the animal - black or grey, and in the radula where the central tooth is much smaller. The type locality for this species is Milford Reef, Auckland (under boulders at low spring tide). It was also found at the Noises Group about the same time. It doubtlessly occurs quite frequently around other local beaches, too, but one would have to check the colour of the foot, which might not be easy as the mollusc retreats right back into its shell when disturbed.

The third species is a rather problematical one from deeper water. This is S. maorianus Powell, described in Discovery II Reports on dredged material from off Three Kings Islands. A small solitary species, it is spirally coiled in the early stages and is attached to bottom debris. The adult shell is again very irregular but has a distinctive expanded lip around the aperture. The surface of the shell is smooth and a dull white in colour. Height 2.4mm, diameter 1.1mm. Holotype. This species is dredged, not infrequently around the Poor Knights Islands.



The genus *Novostoa*, erected in 1926 by Finlay, contains the single New Zealand species *N. lamellosa* (Hutton) = *zelandica* (Q & G).

This species can be found at low tide in rocky situations, but beach examples are more frequently seen. These consist of intertwined masses of irregular shaped tubes, often much worn. The first few whorls are more or less spirally coiled and vermiform, but later the tubes straighten out.

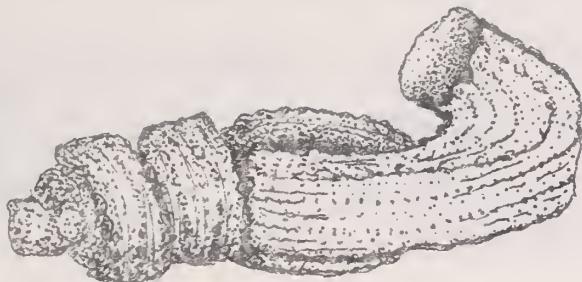


They are whitish, with no distinctive sculpture. It occurs throughout New Zealand, but is said to be more common at the Chatham Islands and around the Cook Strait area.

Dendropoma squamifera Ponder

A rather rare vermetid which occurs in moderately deep water and, so far, has been recorded only from the north of New Zealand.

This species is again an irregularly coiled tube (often closely intertwined) and of reasonable size - diameter of tube up to 10mm, generally attached to the substrate with the aperture raised above.



Dendropoma squamifera Ponder.

The upper surface of the tube bears two main carinae which have short, distinct, vertical, backward directed spines and several weaker scale-bearing ribs between. Scales are formed on the weak circular growth lines. Tube white. Holotype from 49 fathoms off Cape Karekare.

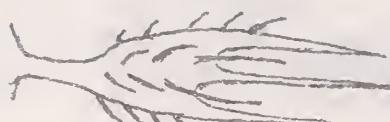
Stephopoma roseum (Q & G)

Some confusion exists around this species. It occurs attached to rocks at low spring tide level and is said to be not uncommon. Morton 1951. Has been recorded from Takapuna Reef, Milford, Noises and Bay of Islands.

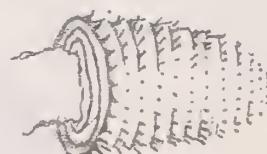
This is a comparatively small species and the figure reproduced here is three times the actual size. The key to certain identification seems to be the odd operculum which has a series of erect bristles. These are said to help strain out larger foreign matter from the inhalent current.



Stephopoma roseum.



Operculum bristle.



Operculum.

References:

Morton J. E. 1951 The Structure and Adaptations of the NZ Vermetidae
Trans. Roy. Soc. Vol 79

Ponder W. F. 1967 A New Species of Dendropoma from New Zealand Mollusca: Vermetidae
Trans. Roy. Soc. NZ Zoo. Vol 10, No. 2

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SOME NOTES ON NEW ZEALAND STONY CORALS

N. W. Gardner

Although stony corals do not appear to be a very important element in our fauna, we do, in fact, have some twenty-five recorded species which are arranged in sixteen genera and have a benthic range from the littoral zone down to 700 metres.

Corals can be divided into two groups according to their ecological preferences - the hermatypic or reef-forming corals and the ahermatypic or non reef-forming kinds, and it is the latter which are of greater interest to us.

The stony corals (ahermatypic) of New Zealand are said to be related to those of the South Pacific and Antarctica, but show little relationship to those of Australian waters. Less than half of our species are endemic, but only two show Australian affinities. They resolve themselves, rather loosely, into several groups:

Solitary individuals, Colonial types, and Branching corals, which, of course, are colonial.

The one most likely to be seen around our shores is the solitary species which can quite easily be found under rocks at low tide level along rocky shore lines. Here it will be firmly attached, with a raised corallum. The corallite is cup-shaped and has a sharp edge.

This is Flabellum rubrum (Q & G) (Polyp usually a salmon colour) and it occurs from the intertidal zone down to 200 metres. Deep water specimens are generally larger, with the corallite compressed or flattened and though they have a slender stem, often seem to be unattached to the substrate. While rubrum shows close affinities to Antarctic species, no examples have been reported from south of Stewart Island.



Flabellum rubrum

There are seven species of Flabellum around our shores but all seem to be rather rare. One from the Chatham Rise, F. knoxi, Ralph & Squires, No. 2, is the largest species and has a very wide angle.



Flabellum knoxi



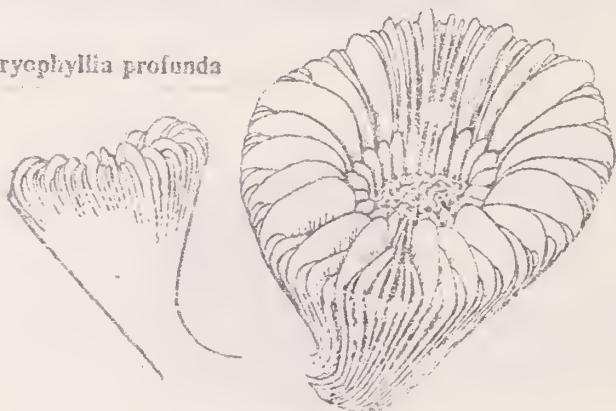
Flabellum lowekeyesi
Squires & Ralph.



Flabellum aotearoa
Squir

Another genus of somewhat similar appearance to Flabellum is Caryophyllia, but the corallum is taller with a more slender 'stem'. The species most often seen is C. profunda Moseley, but it is really quite rare, for it occurs in deep water 60 - 1,116 metres. It has an expanded calice up to 40mm with a central 'crown'. It has a wide distribution, occurring right round New Zealand and Chatham Islands, and is thought to be circumpolar.

Caryophyllia profunda



There are a number of other solitary types that are somewhat similar to the above species, and illustrations of several are provided.

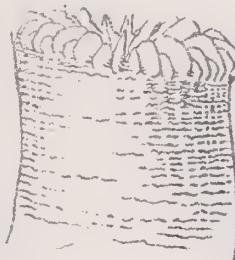
Paracyathus conceptus
Gardiner

15mm high, diameter 12mm



Paracyathus conceptus
Gardiner

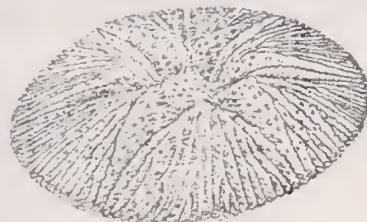
Ceratotrochus limatulus
Squire
Attached, cylindrical
diameter 1cm



Ceratotrochus (C.) limatulus

Letepsammia sp.

Fragments only from
Northern New Zealand



Letepsammia sp.

Those of you who have sorted through deep water dredgings will almost certainly have come across a fascinating small kind which seldom exceeds 5mm in diameter. It is subconical, white, and the septa seem to extend from the centre out and down to the base, giving the appearance of having been turned inside out. This is Kionotrochus suteri (Fig.1), which is an endemic species from northern New Zealand.

Another small species similarly ribbed, 3.5mm in diameter but taller, is Sphenotrochus ralphae Squires (Fig.2). It is distinctly compressed or flattened and is sometimes seen in dredgings from north of the North Island.

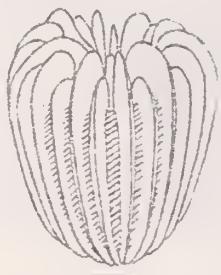


Fig. 1

Klonotrochus (K.) sutrei
Dennant



Fig. 2

Ephenotrochus ralphae
Squires.

The ordinary colonial corals are small encrusting types, connected by basal extensions - sometimes several dozens side by side. The best example of this would be *Culicia rubeola* (Q & G) (Fig. 3), which is not infrequently seen locally on rubble from dredgings down to 50 metres. It has been recorded intertidally at Narrow Neck and Long Bay, Auckland, and at Mahurangi West, East Coast.

Distribution: Central and South West Pacific (littoral zone), New Zealand, more especially in the north.



Fig. 3

Culicia rubeola
Q & G.

Of the branching colonial corals, *Oculina virgosa* Squires is no doubt the most striking one we have. It has been recorded only from the far North in 100 to 300 metres. It is sometimes caught in fishing nets and pulled free from the bottom, but apparently does not grow in big masses. Pieces of 30cm x 30cm have been seen. Polyps are pinkish in colour, corallites are small and arranged along the branches which can be about 3cm diameter near the base.

It may be of interest to conchologists to know that live specimens of the mollusc *Trophon (Emozamia) lucina* are to be found within the clusters of branches of this

coral and it seems likely that this shellfish feeds on the polyps.



Oculina virgosa

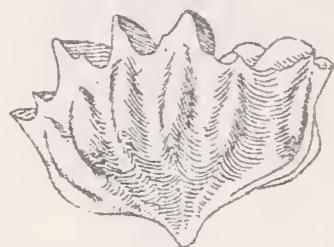
The genus *Madrepora* is represented in New Zealand by the species *vitiae* Squires & Keyes, and was known, at the time of naming, from one station north west of Cape Farewell in 230 - 250 metres.

It has long, slender branches with the calices slightly protuberant and regularly arranged in an alternating fashion.

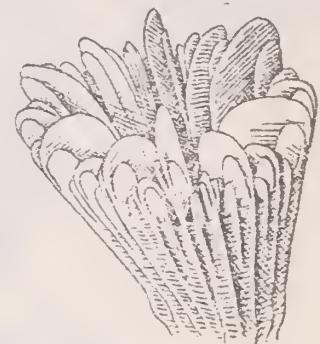


Madrepora vitiae

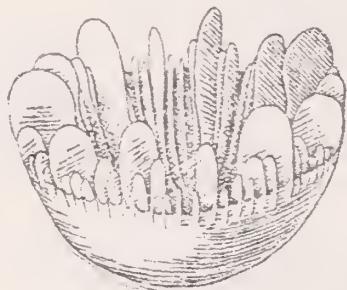
Species of New Zealand Scleractinian Corals from Deep Water.



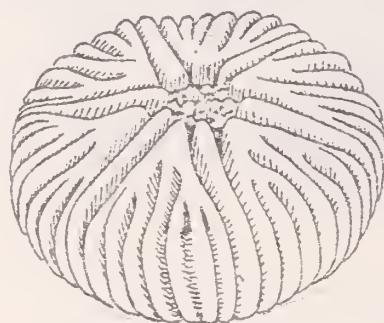
Flabellum raukawaense Squires.



Desmophyllum cristagalli
Milne-Edwards
Haine.

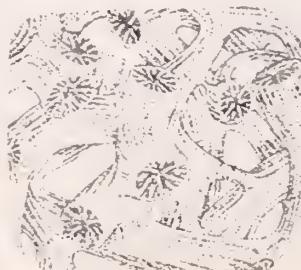


Stephanocyathus sp.

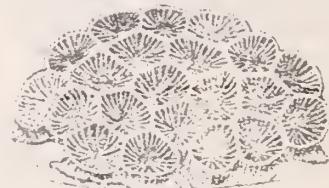


Stenocyathus decamera
Ralph & Squires.

Notocyathus (Paradeltocyathus) orientalis
Duncan.



Goniocorella dumosa Alcock.



Culcia smithii Milne-Edwards, Haine.



Dendrophyllia palita
Squires.

Hermatypic or reef-building corals are generally not found in waters below 18°C. At about this temperature they do not form reef but occur as individual groups. In New Zealand, during summer the 18° isotherm extends as far south as Cook Strait and in winter retreats to the vicinity of North Cape.

These temperatures are said to be minimal for reef-building coral but still within the range of individuals. It would seem that the occurrence of reef-building coral in Northland is not impossible.

Calice - the opening of the corallite in which the polyp is situated

Corallite - that portion of calcareous exoskeleton which encases an individual polyp margin

Corallum - the exoskeleton of a coral colony or of a solitary coral

Reference:

Illustrations:

Squires D. F. and 1967 The Marine Fauna of
Keyes I. W. New Zealand:
Scleractinian Corals
NZ Oceanographic Inst.
Mem. No. 43

* * *

AN ITEM OF INTEREST - N. Douglas

Cyclomactra tristis Reeve 1854

Further to the article in POIRIERIA, Vol 8, Part 4, August 1976, my second digging of this species alive took place in the Manukau Harbour's estuarine creek on the north side of the Maraeohia Point on 16 January 1977. Specimens kept in fresh water overnight appeared to suffer no ill effects.

Third digging: On 31 January many fine specimens were found living in the Waikato River. This would be about two miles up stream from the ocean surf. They live there from nine inches to a foot deep in black, muddy sand under brown, muddy sand. The river specimens have shells in better condition (not chalky) than those from the Manukau Harbour.

* Succinea archeyi Powell

Hamish Spencer reports finding this species on the fixed dunes at Tairua, Coromandel Peninsula. This was during December 1976 and it is notable that he was able to find a live example at this time of the year. Normally the green algae, Anabaena variabilis, on which they feed, has dried up well before then and the seasonal snails succumbed, but the particularly wet season would have kept the algae going much later than usual.

* Shells of particular interest found lately include a fine Cassmaria ponderosa perryi (Ire.), brought in from Pakiri, Leigh, by Bob Penniket; Uttleya williamsi, picked up at Omaha by Mrs V. Firth - her second specimen. A Spirula spirula with part of the animal attached was found on Piha Beach, West Coast, during the May holidays by Tony Cunningham. Although many hundreds of these molluscs are cast ashore, it is a great rarity to find one with any trace of the animal attached. The 'blow' that brought this specimen in also deposited a 15cm Paper Nautilus - Argonauta nodosa - on the ocean beach south of Hokianga Harbour. Large specimens of Janthina janthina = violacea, were cast up along the West Coast from Piha to Ninety Mile Beach.

* * *

FIELD TRIP TO WAIPOUA FOREST

There always seem to be a few hardy souls who are willing to test their luck late in the season, and so the 21st of April saw a small party in the Waipoua area of Northland in quest of land snails. Naturally, it rained and the dampness at times tended to restrict us somewhat, but with visual collecting, leaf litter samples and a certain amount of playing around in flooded water courses, we did obtain a fair number of species for our trouble.

A brief stop at Ruawai on the Kaipara Harbour allowed us to examine some rocks below the wharf. Here, below high tide level, we were able to see many Potamopyrgus esturinus Winterbourn, gathered together in groups of 50 to 100 specimens under the rocks on soft mud. This species looks just like P. antipodarum Gray, being the same size and shape, but apart from its habitat preference, is said to have a different reproductive pattern.

A brief side-track to Kai iwi lakes, north of Dargaville, to check for freshwater species, gave negative results. The shore line of soft sandstone seemed to support not a single freshwater snail - not even Potamopyrgus. Sieving in a foot of water produced a couple of small crabs similar to marine species, although this lake is several miles from the coast. There was no sign of Hyridella.

We camped at Trounson Kauri Park and spent some time admiring numerous Kauri trees and collecting snails. However, snails are not plentiful in this area for some reason, though a few were tracked down and one young member did quite well with freshly dead Paryphanta busbyi, which had sheltered under bits of corrugated iron in the vicinity of the camp site. Incidentally, during the night we heard a couple of kiwis calling quite close by.

A nearby stream, investigated next morning, produced some fine examples of Latia neritoides (a black limpet with a peculiar shelf inside) which were living under rocks in the fast flowing rapids.

Most of the land snailing was done near Forest HQ turnoff, an area known to be quite good for small species. Here, Liarea t. waipoua, Cyrtora pallida and Phrixgnathus scadium were much in evidence, along with that old faithful, Phenacohelix giveni Cumber. A list of species seen, as far as has been checked at this stage, is as follows:

Omphalorissa purchasi (Pfr.)
Liarea turriculata waipoua Powell
Cyrtora aranca (Powell)
Cyrtora cyrtora (Gray)
Cyrtora torquilla (Suter)
Cyrtora pallida (Hutton)
Cyrtora n. sp.
Allodiscus urquharti Suter
Serpho kivi (Gray)
Therasiella tamora (Hutton)
Therasiella neozelanica Cumber
Phenacohelix giveni Cumber
Phenacohelix pilula (Reeve)
Suteria ide (Gray)
Ptychodon varicosa (Pfr.)

Charopa angicula Reeve
Charopa charopiformis Gardner
Charopa ochra (Webster)
Mocella eta (Pfr.)
Laoma (Phrixgnathus) glabriusculus (Pfr.)
Laoma (Phrixgnathus) francesci (Webster)
Laoma (Phrixgnathus) elevatus (Suter)
Laoma (Phrixgnathus) ruforadiata Gardner
Laoma (Phrixgnathus) n. sp.
Paralaoma lateumbilicata (Suter)
Tornatellinops novoseelandica (Pfr.)



Laoma (Phrixgnathus) ruforadiata.
1.75 mm ± 1.25 mm.

(Several of the specimens of Cytoria pallida which were collected are a pale yellowish-white in colour. The occurrence of these albinos in the Waipoua area has long been known).

Opportunity was also taken to obtain samples of mud from seepage areas in the darker parts of the forest, although these were not easy to locate with excess surface water after the rain. The following species were obtained from these samples:

| | | |
|--------------------------|--------------------------------|---------------|
| Potamopyrgus cresswelli | Climo | not uncommon |
| Potamopyrgus antipodarum | (Gray) | odd specimens |
| Potamopyrgus antipodarum | forma spelaeus (Frauenfeld) | not uncommon |
| Pisidium casertanum | poli = aucklandica Suter | common |

The occurrence of P. antipodarum and the spelaeus form together is a little surprising.

* * *

NEW PAPERS ON NEW ZEALAND MOLLUSCA

* Two New Species of Pseudaneitea Cockerell
(Athoracophoridae : Gastropoda) from New Zealand

D. W. Burton

Journal of the Royal Soc. of N.Z. 1977 Vol 7,
No. 1, March 1977, pp 93 - 98, 3 figs

Abstract:

Two new species of Pseudaneitea are described, P. leva from Mid-Canterbury, P. nodosa from the Outer Chetwode Is. An account of the anatomy of each is given, and their affinities are discussed.

Land slugs belonging to the Family Athoracophoridae are found in the Admiralty Is., New Britain, New Hebrides, New Caledonia, the east coast of Australia, New Zealand, and the subantarctic islands. The most distinctive character of the family is the presence of a dorsal tracheate lung, consisting of a pulmonary cavity from whose floor thin-walled pulmonary diverticula radiate out to form the roof of a blood sinus.

The first species described in this paper was found in a beech forest near Staveley by Mr P. M. Johns, of the University of Canterbury. The other species was found on the Outer Chetwode Is. by Mr G. S. Hardy, of Victoria University of Wellington. Both very kindly supplied the writer with all the material they collected.

* A New Higher Classification of New Zealand Rhytididae (Mollusca: Pulmonata)

F. M. Climo

Journ. Roy. Soc. N.Z. 1977 Vol 7, No. 1, March 1977,
pp 59 - 65, 2 figs

Abstract:

Family Rhytididae Pilsbry, 1893 is divided into Rhytidinae Pilsbry, 1893 for the genera Rhytida Albers, 1860, Powelliphanta O'Connor, 1945 (here raised from subgeneric status in Paryphanta Albers), Delos Hutton, 1904 and Delouagapia Powell, 1952 (here raised from subgeneric status in Delos); and Paryphantinae Godwin-Austen, 1893 for the genera Paryphanta Albers, 1850, Rhytidarex Powell, 1948 (here raised from subgeneric status in Rhytida Albers, 1860) and Schizoglossa Hedley, 1902. (Amborhytida) Climo, 1974, previously treated as a subgenus of Rhytida, becomes a subgenus of Rhytidarex and Wainuia Powell, 1930, previously treated as a full genus, becomes a subgenus of Rhytida.

* Notes on the New Zealand Hydrobiid Fauna (Mollusca : Gastropoda : Hydrobiidae)

F. M. Climo

Journ. Roy. Soc. N.Z. 1977 Vol 7, No. 1, March 1977
pp 67 - 77, 4 figs.

Abstract:

The author's earlier ideas on the distribution and systematics of New Zealand Hydrobiidae are reviewed and revised. There are two main components to the fauna - an ancient subterranean group whose ancestors were widespread before rifting of Gondwanaland and have a distribution taking in New Zealand, Europe and Japan, and a more recently evolved group. The more recent group was probably a Gondwanian development and is typified by Australasian Hemistomia group and Fluviopupa group genera such as Potamopyrgus Stimpson and Opacuincola Ponder.

Kuschelita Climo, 1974 and Phreatica Velkovrh, 1970 are synonymised with Saganoa Kuroda and Habe, 1958, the latter elevated from subgeneric ranking in Akiyoshia Kuroda and Habe, 1954. Iglica Wagner, 1927 may be an earlier name for this complex. The genus Horatia Bourguignat, 1887 is tentatively introduced to the New Zealand fauna with description of a new species, H. nelsonensis. Opacuincola troglodytes Climo, 1974 is transferred to Potamopyrgus. Potamopyrgus cresswelli Climo, 1974 is recorded from Nelson and P. gardneri Climo, 1974 and P. manneringi Climo, 1974 are synonymized with it.

* Larval Development in Lunella smaragda
(Gastropoda : Turbinidae)

K. R. Grange

N.Z.Journ. Marine & Freshwater Research 10 (3):517-25
Sept 1976

Abstract:

Larvae of Lunella smaragda (Gmelin) are described from laboratory spawnings and plankton hauls. The short-lived planktotrophic larvae were able to be reared up to the stage of torsion, but no further. The larvae are like those described for other turbinid species, although previous descriptions are somewhat inadequate. Fertilisation is external: the young hatch 24h later as green trochophores and change into veligers after a further 24h. Torsion begins 70h after fertilisation and settlement probably occurs shortly after, within 4d of fertilisation.

* Rough Water as a Spawning Stimulus in Some Trochid and Turbinid Gastropods

K. R. Grange

N.Z.Journ. Marine & Freshwater Research 10(1):203-16
March 1976

Abstract:

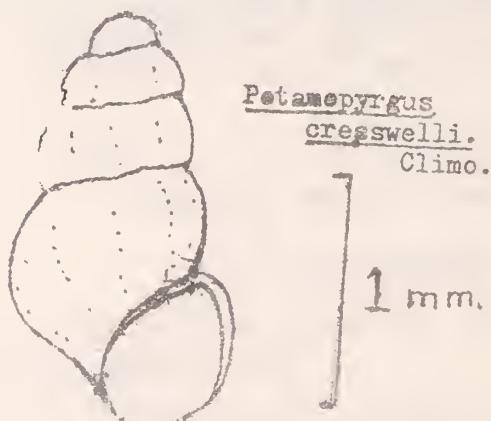
Adults of three species of common intertidal gastropods, Melagraphia aethiops, Zediloma atrovirens, and Lunella smaragda, were collected from Waitemata Harbour, Auckland (36° 51'S, 174° 47' E) and brought to the laboratory, where several methods of artificial spawning were attempted throughout the year. The one successful

method, involving vigorous water movement around ripe adults, induced them to release gametes during their respective spawning seasons, and was equally effective in the natural habitat. Larval stages were found in the plankton only during periods of on-shore wind speeds greater than 10 knots, with which their presence was correlated, rather than with tides, lunar cycles, or sea temperatures.

====

Editors:

N & N Gardner
6 Tui Glen Road
Birkenhead
Auckland 10
New Zealand



Potamopyrgus
cresswelli.
Climo.

See page 22.

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POIRIERIA



Vol. 9. Part 2. September 1977.

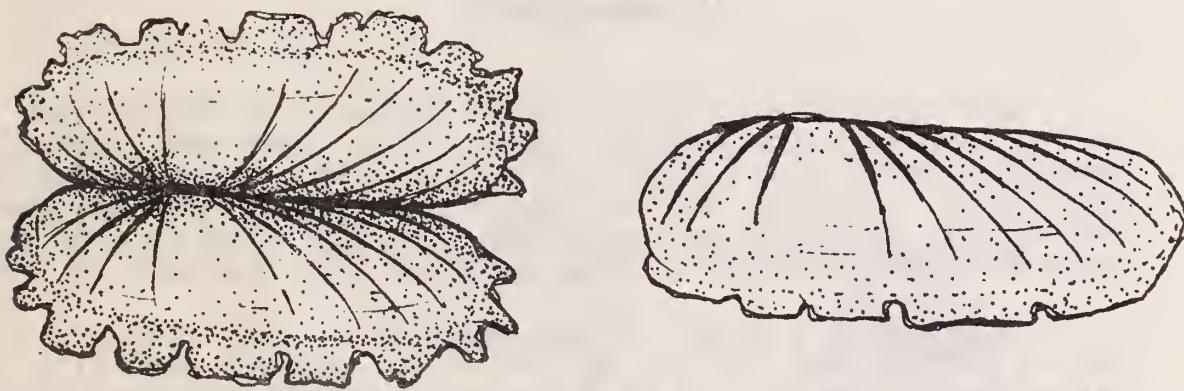
CONCHOLOGY SECTION
AUCKLAND INSTITUTE & MUSEUM

SOLEMYA PARKINSONI

E.A. Smith

This long and narrow, rather primitive bivalve is not often collected alive, not because it is rare, but chiefly because it lives about 15 - 25mm below the surface in areas where there is soft mud - often on *Zostera* flats - a habitat not frequently investigated by most collectors.

In this situation it can occur in some numbers, far more so than one would expect from the appearance of the surface. At Howick, for instance, up to 80 per metre have been recorded. (Morton & Miller, 1968). The molluscs move with ease up and down quite long burrows which are usually 'U'-shaped and open at both ends.



In the family Solemyidae, the shell is somewhat flexible being only partly calcified, and the hinge is without teeth, with the ligament partly internal. The mantle edges are partly fused, forming a tube.

In Solemya parkinsoni, the epidermis extends beyond the margin of the shell, and when washed up along the shore line, the valves are usually open with a serrated fringe of epidermis along the dorsal margin.

Specimens of 50mm are about average, but occasionally examples of 60mm are found. The shell is rather thin, has a series of flattish ribs radiating out from the umbones, and a shiny, warm brown epidermis. It is to be found throughout New Zealand in suitable locations, and is especially common in the Parengarenga, Houhora and Tauranga Harbours.

The family, as a whole, has a wide distribution, being found in the Mediterranean Sea, East Coast of North America, West Indies, Patagonia and the Australasian region. There are not, however, a great number of species.

Reference: John Morton & Michael Miller The New Zealand Sea Shore, Collins, 1968

* * * *

THE CHRYSALIS SNAIL (LAURIA CYLINDRACEA)
IN NEW ZEALAND

R. C. Willan

Last year Bill Tong and David Hayman, two sharp-eyed technicians from the Zoology Department at Auckland University, brought me some tiny brown land snails they had found beneath the bark of a fallen tree in Auckland Domain. These specimens were Lauria cylindracea (da Costa) (Fig. 2), which is a European introduction that has not been recorded from New Zealand before.

Lauria has a dumpy little shell up to 3mm high; or, to put it another way, it is "not above one quarter part of a barley-corn in size", so da Costa measured them in his original description of 1778. The shell is high-spiled, cylindrical with very rounded whorls and a dull surface which is horny-brown in colour, the apex is like a flattened dome. There is a flaring white outer lip and this is continued on to the peristome, towards the upper part of the columella is a single denticle. This denticle is present in all the New Zealand shells I have seen, although in Britain the denticle can be absent (var. edentula) or there may be two (var. bigranata). There is a deep and acute umbilicus to the shell. Lauria cylindracea is distributed throughout Europe, North Africa and Madeira Island. Dr M.P. Kerney of Imperial College, London, has confirmed my identification and added the New Zealand shells are in appearance quite typical of European material.

A second member belonging to the same family (Vertiginidae), Vertigo pygmaea (Draparnaud), has also been introduced to New Zealand. This shell has a mouth full of teeth (5 denticles) and is even smaller than Lauria cylindracea.

In New Zealand the only other land snail species which Lauria could be mistaken for is Cochlicopa lubrica (Müller), the so-called "Slippery Snail" (Fig. 1). But Cochlicopa belongs to a different family (Cochlicopidea), it can reach 7mm in length and, as its name "lubrica" implies, the surface is very shiny as though it had been oiled. The shell is yellowish, horn-brown and transparent. There are no teeth in the mouth and there is no umbilicus. Cochlicopa resembles a miniature Placostylus. It is common in gardens all around Auckland, in both shaded and open situations; for example under fallen leaves, damp bark and hollows, especially where Tradescantia sp., the "Wandering Jew", has become rampant. Although I have found Cochlicopa penetrating some distance into bush along with our native snails.

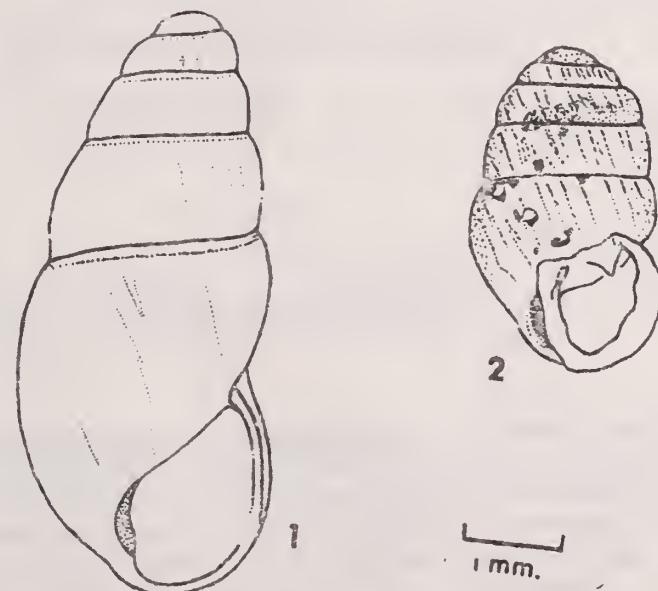


Fig. 1. Cochlicopa lubrica (Müller) near Lake Pupuke, Takapuna.

Fig. 2. Lauria cylindracea (da Costa) Auckland Domain.

Lauria cylindracea is very similar to the European Pupilla muscorum (Linnaeus), the "Moss Snail", and Whitten (1955) probably mistook Lauria cylindracea for Pupilla when he recorded the latter from Thames and Western Springs, Auckland. Both are similar in size and shape with expanded outer lips and one denticle inside the mouth. However, in Lauria the peristome is reflected, the insertion of the columellar lip turns away from the mouth and the parietal lip is continuous. In Pupilla the peristome is not reflected, the columellar lip continuous in a circle around the peristome and the parietal lip is inconspicuous. According to John Evans in his excellent book "Land Snails in Archaeology", these two species live in very different, almost exclusive, habitats. Lauria is a woodland species occurring in shaded spots on rocks and under logs and is also common on stone walls. Pupilla is an open-country species typical of grassland habitats and sand dunes; a characteristic site of Pupilla is earth that is bare of vegetation and it rarely enters woods or other shaded places. In Britain changing densities of these two species in buried soil layers have given information on past climates and man's cultural effects on his surroundings.

References: Ellis, A. E. 1926 British Snails

Oxford University Press 298pp

Evans, J. G. 1972 Land Snails in Archaeology
Seminar Press 436pp

Whitten, H.E. 1955 Introduced Land Molluscs of
New Zealand
Conch. Section, Bulletin No. 11: 1-7

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SIPHONARIA COOKIANA Suter

B. Elliott

Some years ago I considered Siphonaria cookiana to be a very difficult shell to obtain. During my ten years at Takaka, when I combed the beaches of Golden Bay and the West coast of Nelson, I found only a few battered beach specimens of this shell. Probably there were plenty of them there, but I did not know where to look - or failed to realise that they were different from S. zelandica.

When I moved to Stephens Bay, Motueka in 1969, and began a separate collection of shells from that area, I found that beach specimens of Siphonaria cookiana were not uncommon. If there were dead specimens, there had to be live specimens ... but where? We are told that Siphonarias are air breathers, so the obvious place to look was from mid tide to high tide, in rocky areas. For over a year I kept an eye open for these elusive little shells, at times searching diligently, peering into rock pools and crevices, and all the places where S. zelandica was so common. Again and again I would go home empty-handed and baffled. Then, in September 1970, I discovered them quite by accident, living on Perna canaliculus at extreme low tide. Air breathers ??? They would not get very many opportunities to do so, being exposed to the air only during the lowest spring tides. There, on the mussels, among Patelloidea corticata, barnacles and other marine growth, they were well hidden, and one had to look closely to find them.

In October 1975 I received another surprise. I left my car at the end of Staples Street, Motueka, and followed the tidal creek out to low tide. What a barren spot - sandy mud, a few stones and sea lettuce, with hardly even a pipi to break the monotony. Heading northwards, I came to an area of small stones, and spotted a live Siphonaria cookiana on one of the stones. As I bent to get it I saw another, and another, and another ... hundreds of them! So they were not rare after all - it was just a matter of finding the right place. In a very short time my little container was filled with the largest and nicest of the specimens.

At Tahunanui, Nelson, beach specimens of S. cookiana are not uncommon, but extensive searching at low tide failed to reveal their habitat.

In January 1974 Norman Douglas and I discovered S. cookiana and S. zelandica living together at low tide at the Ninepin Rocks, Manukau Heads. This is the only North Island locality I know of; doubtless they are widespread, but easily overlooked.

Other localities for S. cookiana include Ringa Ringa, Stewart Island; Marfells Beach, Marlborough; Torrent Bay in the Abel Tasman National Park, Nelson; and Kaikoura Peninsula, where they are found on low tidal stones both on the northern side of the peninsula between the Marine Laboratory and Kaikoura Wharf, and on the southern side at Atia Point.

ITEMS of INTEREST

- * From Geoff. Forman, Wairoa 2 June 1977

"We have had repeated southerlies with huge seas building up, and following the last blow, I spent some time looking at Mahia.

Opautoma Beach was swept almost clean, except for a number of live Struthiolaria papulosa and Alcithoe swainsoni. The sheltered side (eastern) turned out to be the bestabet. I drove almost to the end of the road. Most of the area was clean, except for one area of sand at the back of the reef area. Here, huge piles of shell and sand had been deposited. I had a good scratch around and came up with five Trivia merces. I think this may be the same spot where previous cowries have been taken. Other shells worth finding were a single Aeneator otagoensis and a Marginella mustelina. Until now I had not found one south of Tolaga Bay. This specimen had the normal colouring, while the specimens I have found at Tolaga are a lead grey."

- * Paphies subtriangulata quoyi Deshayes

This bivalve, known previously as Amphidesma forsteriana Finlay, is generally looked upon as being of southern occurrence. However, it does exist well up the East Coast of the North Island, for recently numbers of very fine specimens were washed ashore at Waikanae Beach, Gisborne.

In this subspecies, which is generally larger than the typical Tuatua, the valves are somewhat flatter and the 'slope' of the anterior end is not as acute.

- * In the Wittericks marine tank, the Hairy Triton, Monoplex parthenopeus, is hairy no longer. You could even describe it as clean-shaven, as the shell is bare and faded now with none of the periostracum remaining. Instead of burrowing right down deeply into the gravel floor of the tank, this year in April the animal went "walkabout" around the glass sides without eating and settled motionless in one spot. Last year's "hibernation" lasted from April right through until August except for an occasional nibble at a live cockle in the first week or two.

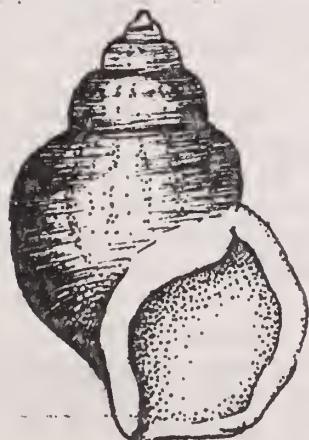
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STRUTHIOLARIA (PELICARIA) VERMIS FLEMINGI Neef

Over the years we have seen a periodic rearrangement of the species attributed to the subgenus *Pelicaria*. For a while, S. (Pelicaria) tricarinata Lesson is included in check lists, then abruptly disappears. Just now, it seems to be banished again. The tricarinata sculpture (the chief claim to recognition) is something which appears at random and to a varying degree in most populations of vermis with apparently no clear distributional pattern, though possibly it may occur a little more frequently in the south. Three specimens from a group of fifteen, collected from Takapuna Beach after a good storm, have this feature reasonably well developed.

In Dr Powell's recent checklist another name appears; and perhaps you are wondering just what this shell - S. vermis flemingi Neef - looks like? It really looks like a very large specimen of vermis with the sub-sutural nodules suppressed or weak, a more rounded body whorl and lacking a definite, distinct colour pattern. This is the reason for its recognition.

Although such large specimens of vermis do wash up from time to time on our northern East coast beaches, best examples are those which are dredged from deeper water. These reach twice the size of the usual harbour specimens which are often distinctly nodular.



S. vermis flemingi.

Height 58 mm. 60 metres Bay of Plenty.



S. vermis vermis

Manukau Harbour.

(Actual size).

• 8 •

However, so-called flemingi comes with varying sculpture - from the almost smooth shell to those with spiral lirae and a mere trace of nodules, and even to some which are strongly ornamented as is seen in typical vermis. A large example will reach nearly 60mm, while a mature, typical vermis from the Manukau Banks may measure only 24mm.

Even the author of this subspecies, flemingi, recognises hybrids between vermis vermis and vermis flemingi, so it seems we, too, could have problems in sorting them out!

||||||||||||||

OUR OYSTERS

N. W. Gardner

Amongst amateur conchologists, there are probably very few who enthuse over the rather uninspiring shells that belong in the family Ostreidae.

Much more interest is generated in the gastronomic angle, and the most interesting specimen of all is the one on the end of a fork - without its shell!

In this respect we are rather fortunate in having two (now three, if you wish) excellent species in reasonable abundance around our shores. In the North we are quite used to seeing the Auckland Rock Oyster, Crassostrea glomerata (Gould), dotted along our rocky shore lines near high tide level, but in the South you would look for these in vain. Oysters found in those parts would undoubtedly be "Bluff Oysters" which belong to a different genus and have a different habitat. From low tide level to fairly deep water on soft bottom, Ostrea lutaria Hutton is relatively plentiful in the region of Foveaux Strait. They do occur occasionally further North, especially in the Bay of Plenty in moderately deep water. Specimens grow to a fair size, some reaching 80mm. There is generally a whitish concave valve and a flat valve above which is covered in a brownish periostracum. The shells retain a fairly regular shape and are not distorted as is the rock oyster, Crassostrea. Spat settles quite readily on small free bottom debris such as old shells and pebbles and so are easily dredged up by crews of the oyster boats. This is the species we have for so many years called angasi.

Ostrea heffordi Finlay

Smaller than the above species, more deeply concave and often grows in clusters of distorted shells attached to seaweed holdfasts, or low tidal rocks. A pale yellowish shell, this could perhaps be the same species as lutaria which has started off badly in a rather unsuitable habitat.

Finlay refers to this as the Port Chalmers' rock oyster. Specimens referable to this occur along the East coast of the North Island where they not infrequently wash ashore after storms, eg Takapuna and Orere Point.

Ostrea charlottae Finlay

A large white oyster, again obviously related to lutaria. However, it seems to prefer even deeper water. The shell is rather flat with the concave valve having large white raised scales and the flat one covered by a light brown periostracum. It seems to be more frequently trawled in the South - Cook Strait to Otago, but there are odd occurrences beyond this. Grows up to 120mm.

Crassostrea glomerata (Gould)

Needs no introduction as it is so plentiful on rocks, etc in most estuarine or sheltered water situations on both Auckland coasts. The dark serrated edge of the shell and the darker muscle attachment area help to distinguish it from the following species which is self-introduced.

Crassostrea gigas (Thunberg)

The 'Pacific Oyster' has been about here for several years and in this time has become well established and is spreading rapidly. It appears to occupy a zone just below that preferred by glomerata and so may not dominate the native rock oyster population.

While it grows rapidly, reaching marketable size in eighteen months, compared with three years for glomerata, it does not last as long out of water - about three days only. C. gigas can be recognised by its white interior, lack of dark crenulations around the lip and the much larger shell which is usually more elongated.

It is fairly well established where oyster farming is practised, the spread of this species no doubt being due to transportation of spat boards from the Mahurangi area where it was first recorded in New Zealand in 1971.

The Pacific, or Japanese, oyster, as it is sometimes referred to, has been introduced to many parts of the world, ie the Pacific Coast of North America; Massachusetts and Alabama coasts; Australia; China; Hawaii and Okinawa (Dinamani 1971).

References: Finlay, H. J. 1928 The Recent Mollusca of Chatham Islands Trans.N.Z.Inst. Vol. 59

Dinamani, P. 1971 Occurrence of the Japanese Oyster, *Crassostrea gigas* (Thunberg) in Northland, New Zealand N.Z.Jour. Marine & Freshwater Resear Vol. 5, No. 2

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COLLECTING LAND SNAILS
IN THE LAKE HAURAKO AREA
OF SOUTHERN FIORDLAND, NEW ZEALAND

N. W. Gardner

Of all the larger southern lakes in Fiordland, Lake Haurako is probably the least well known; in fact, many may not have heard of it at all, for it lies further South than Te Anau and Manapouri. Nevertheless, it is quite a large lake, a scenic one, too, but a little off the beaten track and so is known best by trampers and deerstalkers.

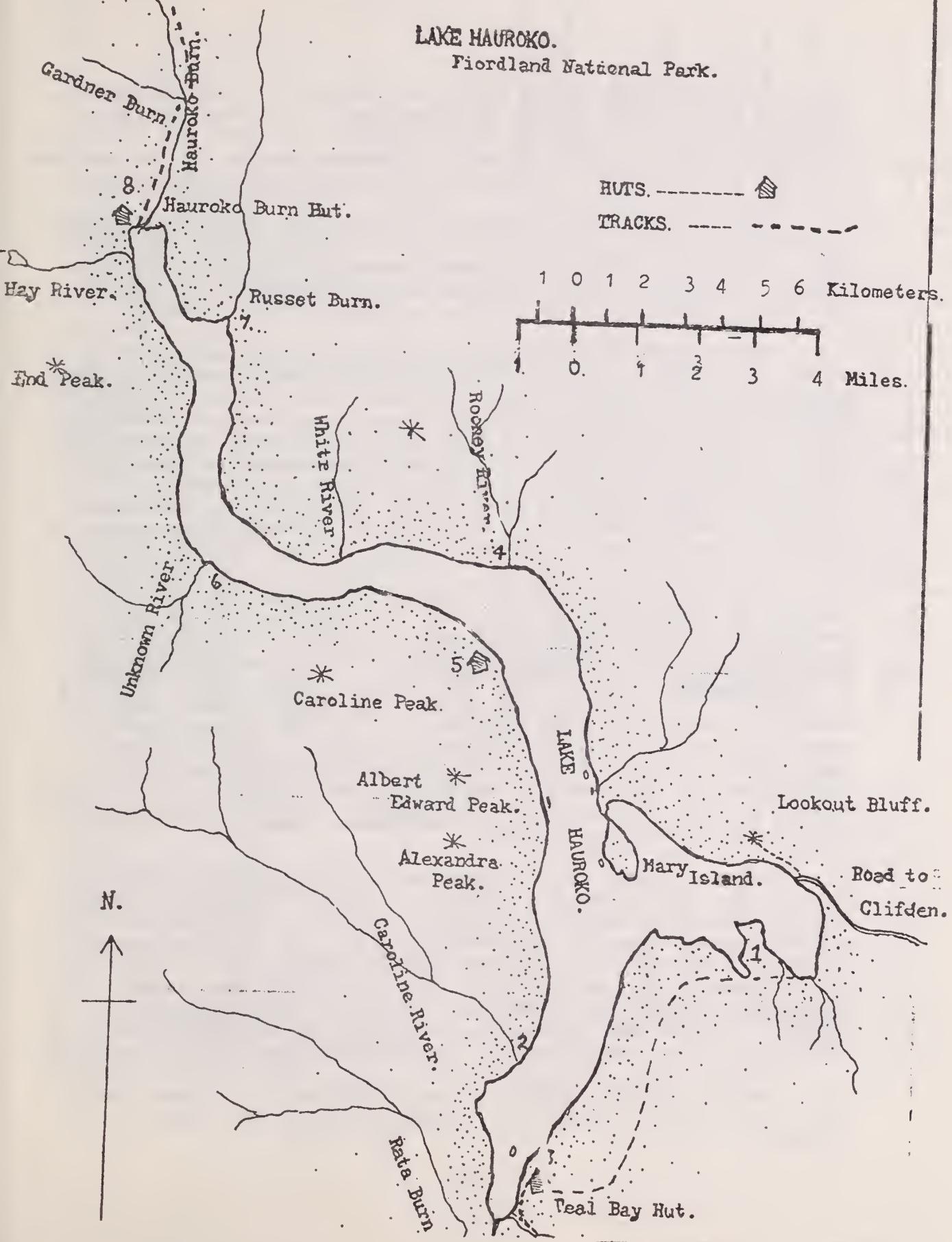
It was because it was off the beaten track and had not been investigated for land snails that Jim Goulstone and I decided we would like to do a survey of the land snails present around the bushclad shore lines. So, with the assistance of the Park Board Headquarters Staff and that of the local Ranger stationed at Clifton, we were able to spend ten days collecting samples from various stations around the shore line and the back and beyond.

We arrived at Clifton after a full day's travelling and stayed overnight with Ranger Ken Hamilton and family - the latter quite intrigued with the organisation of a snail-hunting expedition.

Halfway Hut.

LAKE HAUROKO.

Fiordland National Park.



Next morning we set forth with landrover and the Park Board's boat, which was to transport us to the various huts situated around the lake. Incidentally, the boat was called the 'John Hayes', after an early explorer in the region who has a small inaccessible lake, behind Haurako, named after him.

The road to Lake Haurako is about 20km from Clifton and runs through beech forest to reach the water at the southern end. The water of the lake never seems to be clear blue but always a dark grey and a little sombre, possibly because of the high, bushclad hills which, in places, tower above.

During our first days we collected specimens and leaf mould from between First and Second Bays (on a low ridge which had one of the biggest areas of kidney fern I have ever seen), and at Caroline River mouth, and then moved into the Teal Hut area at the very southern end of the lake, where we stayed for several days. The hut is very comfortable with an excellent stove and twelve bunks - which we had to ourselves. Mosquitoes and sandflies were fairly bad and there were mice in the cupboard (even away back there), so we had to string up all our supplies on to a wire running across the room.

A pile of old logs and debris alongside the hut was carefully dismantled in our quest for snails, and proved most rewarding with the finding of quite a number of Rhytidota otagoensis Powell, Thermia cressida Hutton and many Fectola and Flammulina. Leaf mould from below a large Rimu tree with a raised base of debris was sieved and bagged up for later sorting, and proved very worthwhile. On one of our days in this area, we set off for the Hump, 3400ft (and above the bush line). This was an all-day tramp and worth the great view from the top, but not especially rewarding for collecting, though we did get examples of Flammulina gracilis from rather open and stunted beech forest.

On our fourth day, Ranger Ken Hamilton arrived with Area Ranger Slater from Te Anau to see how things were going and to transport us to a new station at the Caroline Hut, halfway up the lake on the western side. We left our gear here and then went over to the opposite shore to do some further sampling. It was here that we first came across Flammulina laingi - generally listed as Thalassohelix laingi. It was not uncommon around the bases of Blechnum fern, but on the whole collecting was not especially rewarding.

Back at Caroline Hut, it was also poor - a very damp area, with lots of moss over trunks of trees and logs on the ground.

| | Between 1st. and 2nd. Bays. Caroline Creek. | | Teal Bay. | | Hump Track. | | Rooney River. | | Caroline Hut. | | Unknown River. | | Russet Burn. | | Hauroko Hut. | | Lake Hakapona. | |
|---|---|---|-----------|-----|-------------|----|---------------|-----|---------------|-----|----------------|----|--------------|---|--------------|--|----------------|--|
| <i>Omphalorissa purchasi.</i> | 2 | | 118 | | | | 1 | 1 | 1 | 1 | | | | | | | | |
| <i>Cytoria chiltoni.</i> | | | 59 | | 1 | 1 | 1 | 1 | | | | | | | | | | |
| <i>Phelussa helmsi.</i> | 1 | 7 | 12 | 9 | 2 | | | | 5 | 9 | 4 | 1 | | | | | | |
| <i>Thalassohelix igniflua.</i> | 1 | 1 | 129 | | | | | | | | | | | | | | | |
| <i>Allodiscus austrodimorphus.</i> | | | | | | | | | | | | | | 2 | | | | |
| <i>Allodiscus planulatus.</i> | 2 | 1 | 1 | 3 | 2 | | | | | 1 | 13 | 1 | | | | | | |
| <i>Allodiscus</i> sp. | | | 7 | | | | | | | | 34 | | | | | | | |
| <i>Thermia cressida.</i> | 3 | 1 | 49 | 1 | 1 | 2 | | | | 1 | 8 | | | | | | | |
| <i>Phenacobelis pilula.</i> | | | | | | | | | | | 34 | | | | | | | |
| <i>Flammulina perdita.</i> | 8 | 2 | 53 | | 3 | 2 | 14 | 10 | 1 | | | | | | | | | |
| <i>Flammulina zebra.</i> | | | 12 | 17 | | | 29 | 1 | 7 | 22 | 110 | 11 | | | | | | |
| <i>Flammoconcha glacialis.</i> | | | | | 2 | | | | | | | | | | | | | |
| <i>Flammoconcha lateaperta.</i> | | | | | | | 1 | | 1 | 1 | 10 | | | | | | | |
| <i>Flammoconcha laingi.</i> | | | | | 1 | | 30 | 9 | 3 | 8 | 16 | 20 | | | | | | |
| <i>Flammoconcha feredayi.</i> | | | | | | | | | | 1 | | | | | | | | |
| <i>Charopa anguicula.</i> | | | | | | | | | 3 | | 4 | | | | | | | |
| <i>Charopa benhami.</i> | 78 | 1 | 150 | | 2 | 2 | 25 | 112 | 3 | 36 | 1 | | | | | | | |
| <i>Charopa bianca</i> | 110 | | | | 1 | 8 | 5 | | 11 | 54 | | | | | | | | |
| <i>Charopa montivaga.</i> | | | | | | | | | | 1 | | | | | | | | |
| <i>Charopa mutabilis.</i> | 8 | 3 | 11 | | 1 | | | | | | 1 | 23 | | | | | | |
| <i>Charopa pilsbryi.</i> | 1 | | | | 1 | 1 | | | | | 1 | 1 | 3 | | | | | |
| <i>Charopa tapirina.</i> | 29 | | 14 | 248 | 4 | 12 | 10 | 9 | 23 | 166 | 5 | | | | | | | |
| <i>Charopa reefoneensis.</i> | | | 3 | 8 | 10 | 3 | 1 | | | | 2 | 16 | | | | | | |
| <i>Charopa hectori.</i> | 5 | | 1 | | | | 7 | 26 | | | | 2 | | | | | | |
| <i>Charopa microundulata.</i> | 27 | | 27 | | | | | | | | | | | | | | | |
| <i>Charopa smithae.</i> | | | 1 | | | | | | | | | | | | | | | |
| <i>Aeschrodomus stipulata.</i> | 15 | 5 | 106 | 8 | 20 | 2 | | | 23 | 22 | 5 | | | | | | | |
| <i>Subfectola rakiura.</i> | 2 | | | | | 1 | | | 1 | | | | | | | | | |
| <i>Laoma celia.</i> | 1 | | 3 | | | | | | 4 | 33 | 25 | | | | | | | |
| <i>Laoma</i> cf <i>spiralis.</i> | 97 | | 7 | | | | | | 1 | | 1 | 1 | | | | | | |
| <i>Laoma</i> cf <i>liratulus.</i> | | | | 1 | 3 | | | 3 | 9 | 1 | 2 | | | | | | | |
| <i>Laoma serratacostatus.</i> | | | | 5 | | | | | | | | | | | | | | |
| <i>Laoma viridula.</i> | 13 | 1 | 7 | | | | | | 4 | | 64 | | | | | | | |
| <i>Laoma</i> n. sp. | 2 | | 5 | | | | | | | | | | | | | | | |
| <i>Obanella</i> n. sp. | | | 17 | | 1 | | | | | | | | | | | | | |
| <i>Paralaoma lateumbilicata.</i> | | | | | | | | | 5 | 4 | | | | | | | | |
| <i>Paralaoma</i> cf <i>sericata.</i> | 4 | | 10 | | | | | 1 | | | | | | | | | | |
| <i>Rhytidia partula.</i> | | | 20 | 5 | 3 | 8 | 9 | 3 | 7 | | | | | | | | | |
| <i>Reflectopallium</i> cf <i>pseudophyllum.</i> | 1 | 2 | | | | | | 3 | | | | | | | | | | |
| <i>Pseudaneitea</i> cf <i>dendyi.</i> | | | | | | | | | | | | | | | | | | |

Next day we moved on again to the Unknown River en route to the Haurako Hut at the northern end of the lake, where we spent several hours on the rather low-lying 'delta' at the mouth of the Unknown River.

Collecting was best around the raised pile of debris at the base of Rimu trees. Leaf mould was taken and then on we moved to the Haurako Hut situated at the mouth of the Haurako Burn. (Most rivers and streams seem to be called 'burns' in this area). This hut is the starting point of a several days' tramp to Cascade Creek on Dusky Sound and on to Te Anau.

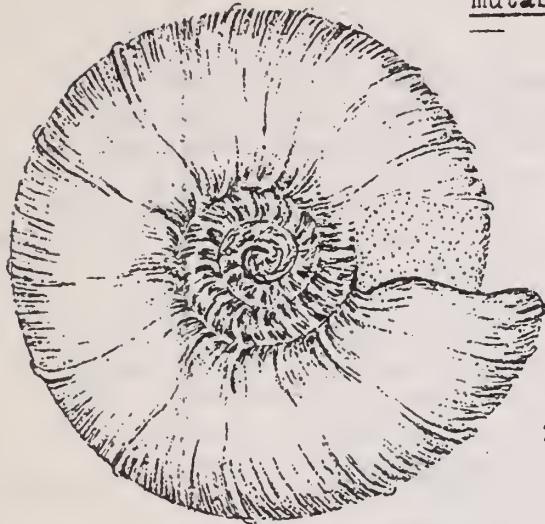
The following day, Ken Hamilton stayed overnight with us and while the 'John Hayes' was still about, we made a short foray into a likely-looking area at Russel Burn. It was, however, rather hard going with very sparse Rimu trees and very few snails. Also, at this time it started to rain, visibility was poor and collecting difficult. Up till then we had had fine, sunny days. Ken and the 'John Hayes' returned to Clifton while we stayed on for a further three days.

At Haurako Hut we duly established ourselves and set to work to cover as much ground as possible around this remote spot.

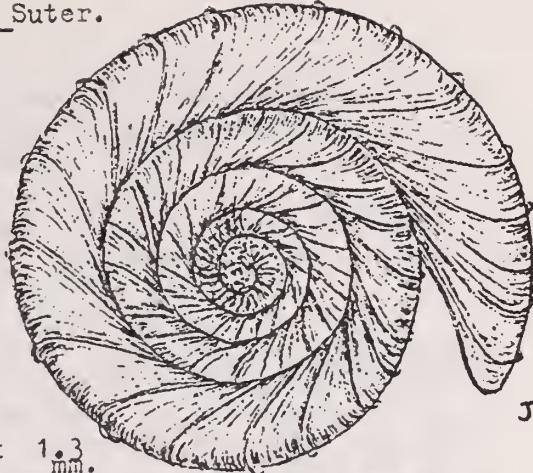
Our first day started off a wet and dismal one and to make matters worse, the sandflies were so bad that we had to wear parkas with hoods and a liberal application of repellent every fifteen minutes or so. Gloves were a necessity and fortunately Jim had brought a pair on the offchance - I made do with a pair of plastic bags which were quite effective.

Collecting in the bush in persistent rain was not especially rewarding, so we decided on a different approach. From under a large pile of logs and branches, we gathered up bags of leaf mould (we could see that it contained a fair number of specimens) and this we carried to a pool at the lake's edge. The litter was dumped into the water, allowed to settle for a while and the floating material skimmed off. (In theory, this contains all the snails). Although we had reduced the bulk considerably, we still had some very wet leaf mould to deal with. The problem of drying it was solved by building a good fire in the hut (open fireplace) and standing an old sheet of corrugated iron over the flames. On top we spread out the wet leaf mould and in no time it had steamed sufficiently dry to sieve.

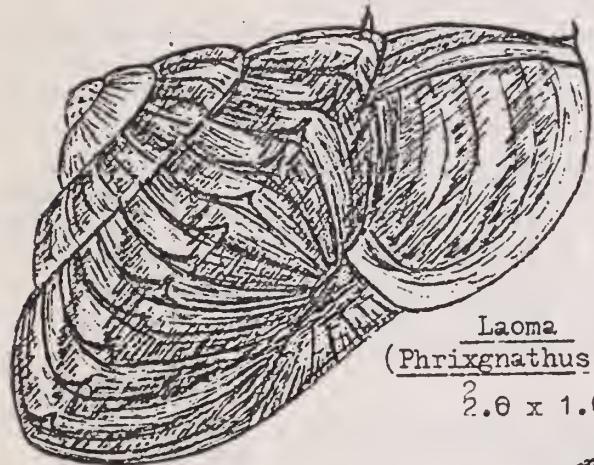
Charopa (Charopa)
mutabilis Suter.



2.3 x 1.3 mm.

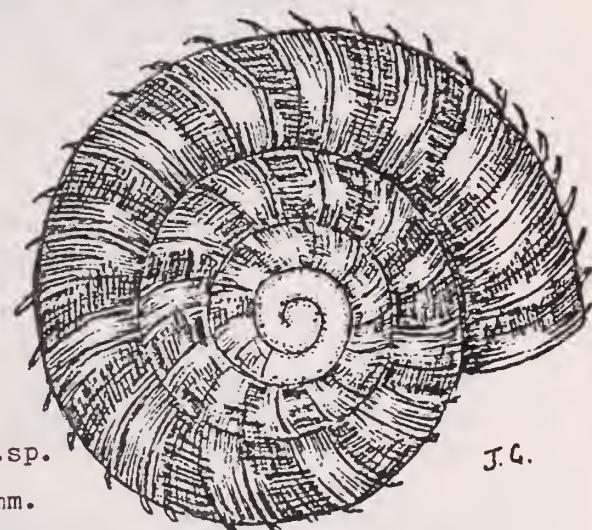


J.G.

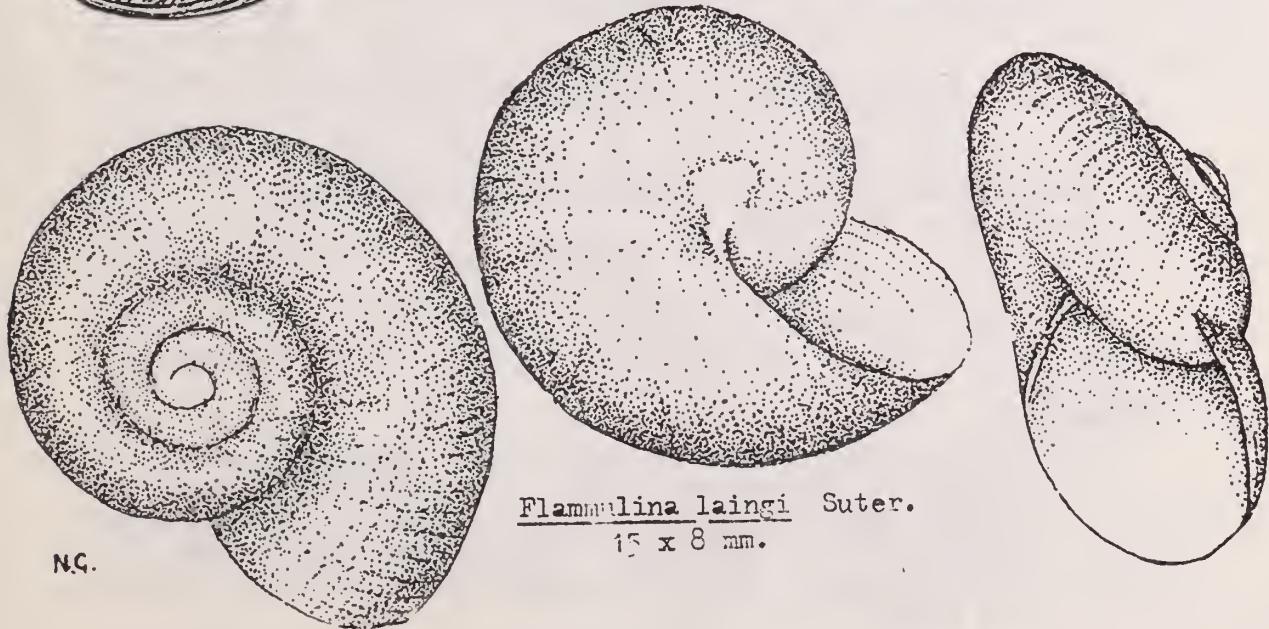


Laoma
(Phrixgnathus) n.sp.

2.0 x 1.6 mm.



J.G.



N.G.

Flammulina laingi Suter.

15 x 8 mm.

By this time, the rain clouds had begun to clear and we settled down to our normal pattern of collecting, searching undersides of fallen branches, under peeling bark of fallen trees, sieving more leaf mould and beating low vegetation. Especially common was Flammulina zebra - beautifully striped specimens, distributed along the undersides of fallen branches, often a dozen or fifteen at a time.

Here we came across a number of the rather rare Flammulina lateaperta, originally found at Caswell Sound by Dr R. K. Dell. On the fronds of Blechnum fern, were quite a number of a species which looked uncommonly like a Phenacochelis. This was subsequently identified by Dr F. Climo as being Laoma subantarctica, a rather unexpected occurrence. In all, some 30 species were found at this station and over 40 altogether.

On our last day, we waited patiently for Ken Hamilton to arrive, as arranged, fairly early in the morning, to return us to Clifton. At 3 o'clock, we were still waiting and it seemed as if we might be spending a further day there because of some unexpected development elsewhere. However, a little later a helicopter dropped in and we were invited by the Park Board to ride out in style - it seems they had a working party at another southern lake and it suited them to get us out this way. The ride certainly gave us a great view of the country we had been working over and of the high surrounding peaks.

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NEW PAPERS ON NEW ZEALAND MOLLUSCA

* New Zealand Cenozoic Gastropods of the Genus Xenophora Fischer, 1807

A. G. Beu

Journal Royal Society of New Zealand
1977, Vol. 7, No. 2 pp 229-241, 27 figs

Abstract:

New Zealand Cenozoic species of Xenophora are: X. neozelanica Suter, 1908, Opoitian (Pliocene) to Recent; X. prognata (Finlay, 1926), Kaiatan (Upper Eocene) to Lillburnian (Middle Miocene); and X. flemingi n.sp., Altonian and Clifdenian (Lower and Middle Miocene).

* A Revision of the Australian and Tropical Indo-Pacific
Tertiary and Recent Species of Pisinna (=Estea)
(Mollusca:Gastropoda:Rissoidae)

W.F. Ponder and E.K. Yoo

Records of the Australian Museum
Vol. 30, No. 10, 1976

(Remarks: Although this excellent work does not touch on the Neozelanic species directly, it must be noted that the Pisinna Monterosato 1878 is shown to have priority, so it will be necessary to use this genus for our species presently listed under Estea Iredale.

Ed.)

* Littoral Benthos-Sediment Relationships in Manukau Harbour, New Zealand

K. R. Grange

NZ Journal of Marine & Freshwater Research
11 (1): 111-23, March 1977

Abstract:

Sampling of 57 littoral stations in Manukau Harbour, Auckland ($37^{\circ}02'S$, $174^{\circ}41'E$) for species composition, distribution, and abundance as part of a base-line ecological survey of the harbour shows that the community trophic structure is related to the sediment grain size. Deposit feeders such as the bivalves Macomona liliana and Nucula hartvigiana and the gastropod Zeacumantus lutulentus are most abundant in fine sand, whereas suspension feeders such as the bivalves Chione stutchburyi and Paphies australis are most abundant in medium sand. The proportion of deposit feeders in the sample increases with decreasing grain size of the sediment. Most stations conform to this general trend, although when the results are plotted as the percentage of deposit feeders against the median and mean grain sizes of the sediment in which they occur, three groups of stations appear anomalous. These stations, at Waiau Pa, Pollok Beach, and Fosters Bay, may be unstable and undergoing a change in community structure or sediment characteristics. Identification of unstable areas using this method may be useful to monitor effects caused by environmental changes.

EDITORS: N & N Gardner, 6 Tui Glen Rd., Birkenhead
Auckland 10, New Zealand



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POIRIERIA



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PART 3.

DECEMBER 1977.

CONCHOLOGY SECTION
AUCKLAND INSTITUTE & MUSEUM

P O I R I E R I A.

Vol.9.

Part 3.

December, 1977.

ROYA KERMADECENSIS Iredale 1912.

These molluscs, small and limpetlike, belong in the Stomatellidae and are sometimes referred to as the 'wide-mouth' shells and also as the 'false ear' shells.

In appearance, Roya has little to indicate a close relationship with the more familiar species of Stomatia, for instance. The shell is rather small, a mere 5 or 6 mm., straight sided, with a high apex and a uniform brown colour, - just like an ordinary little limpet until you look at it under a microscope and then you see the distinctive 'hooked' nucleus.



The original New Zealand specimen, which was not adult, was collected about 1934 from Tom Bowling Bay. Now, it is being found from time to time in beach drift which accumulates in places around some of our Northern beaches. The island at Kapuwairua, is one place where quite a number of specimens have been found in the last few years. It has been recorded from Goat Is. Beach, Leigh; Matapouri; and not uncommonly in shell sand taken close inshore below the cliffs of Poor Knights Islands. Such specimens are not as a rule worn and show very nicely, the distinctive apical whorl.

This species, as the name suggests, was originally found at the Kermadec Islands, and for that matter, the generic name too, has a connection with these Islands. Roy Bell was one of?

hardy family who lived there for some years at the beginning of this century. He was a keen naturalist and obtained many specimens for Mr. Tom Iredale to work on.

— oOo —

NGUNGARU FIELD TRIP.

The eighteen members who attended the field weekend, 15th-16th October, broke up into groups to visit various areas of interest on Saturday and Sunday mornings. As usual, washups at Church Bay, Pacific Bay and Tutukaka were well worth investigation and yielded a Hydatina physis a Cabestana waterhousei, Trivia merces and several Nassarius spiratus as well as Austromitra, one or two very large Muricopsis octogonus, Pupa kirki and Neoguraleus sinclairi, tenebrosus and huttoni.

One small bay down the coast, was strewn with Cellana stellifera and valves of colourful Chlamys zelandiae. Under the low tidal rocks, shelllife was not prolific though seaweeds were lush and various. Several colonies of Austromitra rubiginosa and small Haliotis iris were seen. The chiton, Ischnochiton maorianus was the most common mollusc in the area. and brittle stars, Ophionereis fasciata and O. antipodum.

Pacific Bay, south of Tutukaka, is a very small bay surrounded by steep, high hills. The foreshore is stony and certainly not a place where one would expect to find shells washed up in good condition. This is one of the several bays along this shoreline where Morula chaidea was found to be living some time ago. At that time, quite a number of specimens were seen on the underside of rocks in knee depth of water. The opportunity was taken to see if they were still present at this situation, but even after some scores of rocks were examined, not a single specimen was seen. They have certainly dispersed from here, but odd records of examples from open beaches a little to the north still come in.

There is not a great area of rocks in this bay, that can be moved at all, but the Brachiopod Terebratella inconspicua clustered over the under sides of many and the small Cardita brookesi was unusually common. Some Buccinulum were observed but there was a decided lack of the larger species of the genus. Both Haliotis iris and H. virginica crispata (one or two) as well as H. australis were all represented - this was a very low tide- and we were surprised to see a live specimen of Emarginula striatula though now and again the dead shells are cast up in numbers on some of the beaches in the area.

Several bags of leafmould from nearby bush were brought back, but have not yet been sorted. A number of species were

noted, however, and amongst these were Rhytida dunniac (dead) Numerous specimens of the very tall Liarca turriculata both alive and dead, several Phenachropa novoseelandica, (not as prevalent as we might have expected), Delos jeffreysiana, Charopa bianca, Tornatellinops novoseelandica, and Flammulina perdita were also present.

Samples from a promising bush swamp, revealed no freshwater Hydrobiids.

A pile of dead Pipi shells, Paphies australis, heaped up around a marker-pole at about mid tide level, and just below the Camp, yielded numerous small Notoacmea helmsi. A few were also seen on old shells scattered over the mudflats, and one or two were noted to be of the narrow sided 'scapha' form, though no Zostera sea grass, was evident.

Countless numbers of Macricolpus roseus were piled high against the stone wall at Tutukaka. This must be an extremely prolific species in this area.

Across from the Motor Camp, the quite extensive sand-spit, which is partially fixed with Cassinia and grasses etc., supports a large population of Succinia archeyi. Spent shells of this seasonal snail were to be seen lying out in the open. Under the clumps of Harestail grass (Lagurus ovatus), live specimens were still present. Anabaena algae, by this time of the year, has usually dried up, but this year, with prolonged damp spells, there was enough to support a fair number of snails.

Associated with the Succinea and amongst the damp loose sand grains around the roots of the Harestail grass, Paralaoma pumila and Tornatellinops novoseelandica were very abundant.

These are regular members of the sand dune community.

— oOo —

BULLINA FROM NORTHERN NEW ZEALAND

N.W.Gardner.

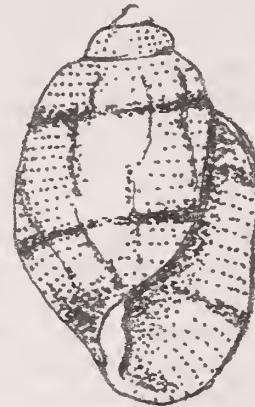
Any collecting trip up North that ends with the acquisition of a 'whole' specimen of the fragile Bullina shell, is always looked upon as being successful. It is a rare shell which washes ashore only occasionally, and would seem to be restricted to the sub-littoral zone; no live specimens have been found between tides in New Zealand.

According to work carried out by Rudman (1971), there are probably four different species occurring around the Auckland east coast. Some of the major differences in shell characteristics are listed below.

Bullina lineata (Gray).

An ovate shell with the spira approx. one seventh of shell height. Side almost straight with two distinct red spiral lines dividing each whorl into approx. equal parts. A diffuse red spiral line sometimes occurs around base of shell. Eight to ten equi-spaced, sinuous, red, axial lines run across body whorl. Up to 15mm. in height, diameter 8.5mm. Has been recorded from Spirits Bay, Houhora, Tokerau Beach, Bland Bay, Whangaruru, Tutukaka, Bay of Islands, Whitianga and Tauranga.

A fine live specimen along with several dead shells in good condition, were found by Ken Grange while diving offshore at Bland Bay in March 1975.



Bullina cf. melior (Iredale)

The majority of Bullina shells which come ashore in New Zealand are considered to belong to this species, though there are some minor differences from the specimen which was dredged in Sydney Harbour.

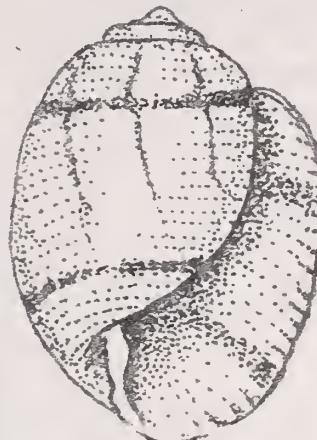
It has a broader shell than B.lineata and has a more depressed spire and stronger sculpture.

There are two red spiral lines around the body whorl and these are often wider than those in lineata.

Red axial lines weak or wanting.

Columella rather straight.

Size 15mm.X10.3mm.



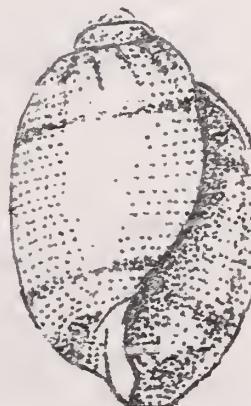
Bullina roseana Rudman.

More globose than B.lineata, pinkish white in colour with two pink spiral lines dividing the body whorl into three parts, the middle one being twice the width of the outer two. Axial red lines not well marked - extending a short distance down from the suture.

Whereas the animal of B.lineata is brilliantly coloured, that of B.roseana is pure white.

Height 12.5mm.X8mm.

Holotype is from the Bay of Islands where the one specimen was dredged alive in 15 fathms. 1969. A dead shell came up in dredgings in 1972, but seems to be a rare shell.



Bullina c/f lauta Pease.

Only two records from New Zealand. This species differs from B.lincata in being more heavily calcified and in having more axial red lines. In B.lincata there are usually eight to ten on the body whorl but in this species there are about seventeen or eighteen. Height 12mm. X 7mm.



Reference : Rudman W.B. 1971
The Genus Bullina (Opisthobranchia, Gastropoda)
in New Zealand.
Journ. Mal. Soc. Aust. vol. 2(2),
pp. 195-203.

—oo—

SOME OBSERVATIONS ON PARYPHANTA BUSBYI BUSBYI.
(Gray 1840).

Patricia Vause

On August 5th, 1976, my family was travelling north to Kaitaia intending to stop through the Mangamuka Gorge and search along the roadside, in the hope of finding a few shells of Paryphanta busbyi busbyi. We stopped just north of the Soda Spring and walked along the roadside, carefully searching in the long grass and roadside bush. There had been a lot of heavy rain during the previous week, and in some places there were slips with piles of clay and fallen branches. Apart from a few Paryphanta fragments here and there, the situation didn't look too hopeful, but we soon

found the first few intact specimens which encouraged us to continue searching. These were dead shells of approx. 40mm. diameter, caught in tussock clumps several feet up the bank off the roadside, and we were all so excited at finding our first *Paryphanta* specimens. Nearer the summit we found a couple of large freshly dead specimens, half buried in clay slips. One other large dead shell we picked up had lost most of the shiny dark greenish periostracum and we could see the solid white, limy shell exposed.

At the summit, we found the weather very cold and windy and the rest of the family were eager to abandon the search. As I was turning back, I spied a *Paryphanta* perched atop an empty beer can on the roadside - our first live specimen! It was evident that roadmen had been clearing out the blocked water table area, and we noticed clay piles containing crushed *Paryphanta* shells. I decided that it would not be safe to leave the live snail where it was, so added it to the rest of our finds.

On our return journey on 8th August, we left at dawn as I was keen to search the roadside from the Kaitaia end of the Gorge in the hope of finding some larger specimens. This proved more productive; we found more fresh specimens along the road edge, and some others caught on the high banks. Soon I observed the sight I had been hoping for - one large beauty gliding along the grassy roadside, fully extended with its head erect, and large, dark olive green shell swaying gently on the dark greyish black, shining body, with long V-shaped tail. It looked surprisingly elegant for such a large snail, but also very vulnerable with passing motorists so close, and the roadmen starting work for another day, so I gathered it up and carefully brought it home.

On arrival, I promptly washed and sorted all my specimens - most were not large, about 40mm. across, but nearly a dozen were 60 - 70mm., and five were apparently still alive. Most of these larger shells had a definite "growth varix" which seemed rather unusual for *Paryphanta*, and I wondered if this was the result of some temporary adverse conditions. One empty shell contained a tiny live *Paryphanta* of 15mm. diameter. This was placed in a large tub containing the big *Paryphantas*, until I could find them up a permanent home. The juvenile promptly attached itself onto the back of a large adult and remained there - each time it was removed, it climbed back onto any one of the large adults again. All the animals seemed sensitive to noise; they quickly withdrew into their shells at the sound of approaching footsteps, or other household noise. I put some minced meat in the bottom of the tub until I could hunt up some worms, but the snails showed no interest in it. Our disused large Aquarium with sliding glass top was set up as a Terrarium with a liberal spreading of wormfilled compost on sand in the bottom. This was covered with moss and leaves and planted with several ferns and grassy clumps.

I had read that *Paryphanta* were voracious carnivores, so decided it would interest the children to watch them feeding outside. We collected a good supply of worms and took our supposedly hungry snails out onto the lawn, to see them in action. The results were very disappointing - the *Paryphanta* showed absolutely no interest at all. At last we were rewarded when one animal became very much activated by the presence of a large worm, wriggling in the grass nearby. Firstly we noticed the *Paryphanta*'s dark glistening, extended body gliding through the grass towards the worm, then it poised for a few seconds, and a large oval, conspicuous white mouth appeared at the base of its head. This structure extended rapidly, then a large proboscis (like that of a *Conus*), darted forward and captured the end of the worm, pausing at the saddle only, while the other end of the worm was still trying to burrow into the ground. We tried offering more worms, but one seemed to suffice, and the snail could'nt be tempted to capture any more. This method of capturing and engulfing the worm was of great interest to me, as I had read that *Paryphanta* usually smother their prey in the extensive folds of their foot and devour the worm piccemeal.

All the *Paryphanta* were placed in their Terrarium in a dark area in our basement, where they quickly scuttled down and buried themselves in the soil under the moss and leaves. They remained hidden most of the time, but roamed around continually under the surface layers. I often observed them with their heads well down into the soil. On rainy, humid nights, they were seen suspended from the glass top or sides of their Terrarium; they rarely emerged in daylight. We added fresh worms to the soil whenever they were available, but noted that when worms were difficult to find, the *Paryphanta* showed no interest in slugs, meat scraps or *Helix adspersa* - even when these were crushed.

In early summer they showed unusual behaviour over a period of several days. All the larger animals emerged onto the surface of the moss and then became very much attached to each other. They remained clasped in a clump of three or four individuals, for some hours, changing positions from time to time. I assumed this to be a prelude to their egg laying, so added heaps of bush mould and leaves and plenty of worms, in the hope of providing the necessary inducements to produce eggs. However I was disappointed as no eggs were laid in the leaf piles or soil, even though the conditions were moist and warm.

Worms were few in summer and one wet summer's day, we tried to get the most active animals to capture fresh worms, after weeks of starvation, while also hoping to get photographs of the interesting event, but still they would not oblige. A few worms were allowed to crawl along the wet path in front of the snails, in fact one even crawled inside the aperture of a

shell, right under the animal's large enveloping foot, and was totally ignored. Our Paryphanta. were certainly not proving to be active carnivores.

The Terrarium remained moist all summer and the occupants seemed happy, even without food. They did not form any epiphram in their apertures, as I had thought they might, when no food was available. The baby snail continued to grow noticeably, so I can only assume that it obtained nourishment from the soil or from other organisms. When the large snails were put outside, they generally remained in their shells. They would not crawl away to avoid the heat and the sun; their shells dried up quickly to a much lighter olive green colour. I was sure the animals would die quickly as their shells felt quite hot, but they soon revived when returned to their cool home.

In early winter, several Paryphanta. died, including the baby one which had reached, by now, 40mm. diameter. This size was about the same as that of many of the dead shells that we had picked up in the Mangamuka Gorge. The other dead shells had all attained a size of 65 - 70mm., and had increased their size by 15 - 20mm. since we had collected them. This appeared to be the maximum size they would attain. The remaining pair of snails in the Terrarium, did not feed on their dead companions but survived another several months with plenty of worms to eat. They have also died, after a full 12 months in captivity, as 70mm adults. Their soft bodies when removed from the shells after soaking in water, were fully relaxed and showed clearly, the large muscular proboscis with its mouth, that had so ably captured its prey.

—oo—

NOTES of INTEREST.

Geoff. Foreman, Wairoa, writes -;
"I have been out to Mahia a couple of times lately with moderate success. One shell of considerable interest, was a beautiful specimen of *Cominella excoriata tolagaensis* washed up on Opoutama Beach, which is on the Hawkes Bay side of the peninsula. I think this extends the range a bit further south. I seem to recall that a colony was found at Young Nick's Head, just south of Gisborne."

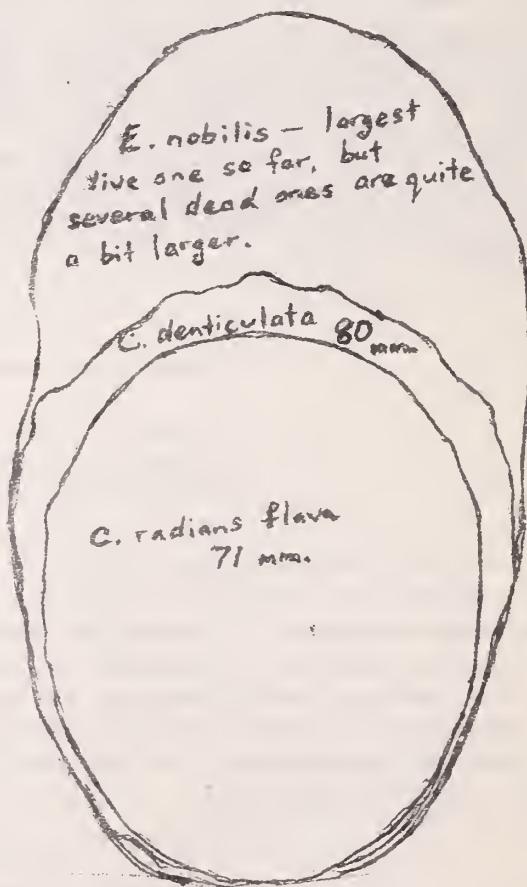
From Betty Wolf, Wellington ;
Re Solemya parkinsoni (E.A. Smith), in "Poirieria", Sept. 1977.

Only once have I found a live Solemya parkinsoni. That was in dredgings taken from the Channel near the Mana Cruising Club near the Porirua Harbour Entrance. It came up with other shells and rubbish, and when I picked it up, it was partly open. On being handled, it tucked its wide epidermis fringe inside the shell and shut tight, looking for all the world like a nice fresh brown date. It happened so quickly, I wouldn't have believed it if I had not seen it myself. It is such a deep fringe to go so neatly inside the shell.

It is the only Solemya parkinsoni I have found in that area. This was in October 1969.

Can you beat these for size ?

Outline tracings
of specimens collected
recently by Miss B.
Elliott, in the
Kaikoura area.



THE SPECIES OF MERELINA IREDALE, (RISSOIDAE),

OCcurring IN INTERTIDAL BEACH DRIFT.

N.W.Gardner.

Although so many of the Rissoidae are rather plain and nondescript, there are a few genera with nicely ornamented shells and if they were to grow to a reasonable size, say two or three centimetres, instead of so many millimetres, they would be especially popular with collectors.

The shells of the genus Merelina, would no doubt qualify for notice, with their distinctive sculpture of raised axials and spiral ribs. In Henry Suter's time, only one species was recognised, and this was listed in his manual as Rissoa ceilostoma subspecies lyalliana Suter. - a very widespread shell, found especially commonly around the northern half of New Zealand coasts.

Subsequent and more critical examination of these tiny shells, has resulted in quite a sizeable list of species, additional ones being described by Powell, Finlay and Ponder.

Of the sixteen species listed in the checklist of the last edition of "Shells of New Zealand", nine are at times available from the accumulation of shell sand which occurs from time to time on certain beaches around the country. These are listed and figured below with some pertinent details. The species not listed are only known from deep water and dredging is necessary to obtain them.

Merelina lyalliana Suter 1895

Our most common and wide-spread species to be found in beachdrift from at least Kaikoura, in the south, to Northland. Quite prolific in shallow water dredgings.

Has two strong spirals crossed by distinct radial ribs producing small nodules at points of intersection. Three smooth spirals on base. Colour cinerous rufus or yellowish white.

Up to 3 mm. in height.



Merelina taupoensis Powell, 1939.

Relatively common in northern parts of the North Island, moreso than M.lyalliana with which it is often found.

This species has a fairly even sculpture of three spirals on later whorls crossed by axials rendering them somewhat nodulous at the periphery. Four clear basal spirals.

Colour, buff with a faint brown band below the suture and between third and sixth spiral on base.

Height 23 mm. Diamter 1.2mm.



Merelina gemmata Powell, 1927.

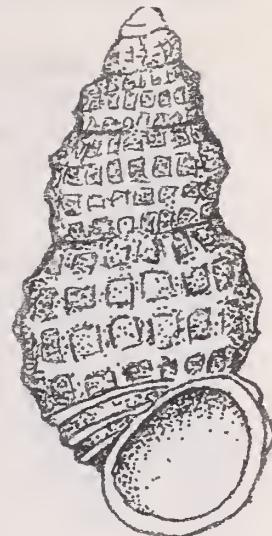
Not uncommon around Northland East coast. A shiny white shell, not strongly impressed at sutures. As the name suggests, the sculpture is evenly gemmate- crossing spirals and axials of equal strength. Outline normally oval. Fairly plentiful in shallow and deepwater dredgings as well as in shell sand in such places as Spirits Bay, Cape Maria van diemen etc.

Height 2.9mm. x 1.25mm. Diameter.



Merelina maoriana Powell, 1939.

Not uncommon in shell sand at Stewart Island, and also occurs a little further to the north at Dunedin Harbour. Sculpture rather like that of *M. taupoensis*, but the shell is a little larger, ribbing not quite as strong and there are only three smooth basal spiral threads. Dull white and no colour bands. Height, 3.0mm. x 1.3mm. Diameter.



Merelina harrisonae Powell, 1939

From Stewart Island where it is quite common in shell sand. This is a little larger than previous species and the sculpture is at once noticeably different, for there are two pronounced spiral ribs on each whorl and these are not crossed by the axials in the same manner as previously listed species. The nodules are compressed laterally. Colour, uniform buff. Height, 3.4mm. x 1.55mm. diameter. Type locality, Ringaringa, Stewart Island.



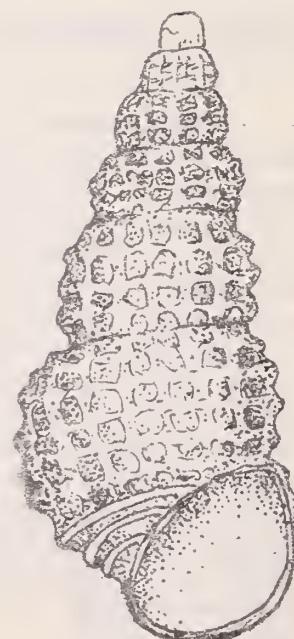
Merelina waitangiensis Powell 1933.

Restricted to the Chatham Islands where it can be obtained from shell sand. It has a greater number of spirals, four on the penultimate and five on the body whorl. These are crossed by strong axials; the interspaces are noticeably rectangular. Four rather wide flattish spirals around base. Colour, uniform buff. Height, up to 4.4 mm. x 1.7 mm. diameter.



Merelina superba Powell 1927.

A little larger than the other Northern species, with rounded whorls and fairly even even sculpture of fine spirals crossed by strong axials reaching from suture to suture and well down around the base. There five spirals on body whorl, three on base. Colour, buff, banded just below the suture and coloured on base with a light brown. Height 3.6 mm. x 1.4 mm. diameter. Type locality, Chicken Island (Maro Tiri). Not uncommon in shell sand at Spirits Bay, Merita, Etc.

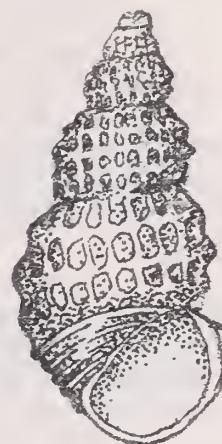


Merelina rubiginosa Ponder 1967.

This species appears very similar to M. taupoensis but is distinguished by its smaller size and darker uniform colour. They occur together at the Type locality which is McGregor's Bay, Whangarei Heads. There are three spirals on all spire whorls and four smooth ones on base base.

Colour, uniform orange brown.
Height 2.16mm. x 1.0mm. Diameter.

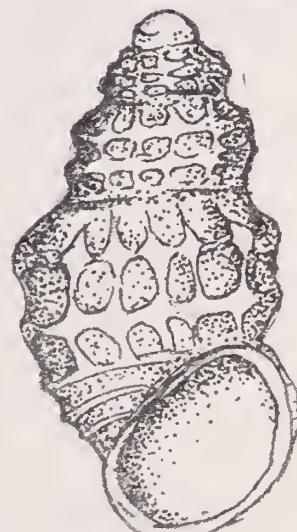
A Northern species as far as records go.



Merelina compacta Powell, 1927.

A very small species of 1.35mm. x 0.65mm. The body whorl has three spirals (upper two stronger), which are crossed by stronger axials. Rounded outlines to whorls.

Colour, uniform buff.
A rather uncommon species, and only a few specimens appear to have been sorted out of shell sand. The type locality is Manganui, 6-10 fathoms.
I have had it from shell sand washed onto the Island at Kapuwairua.



It is most unlikely that any of the other known species would be obtainable from shorelines; most of them are from very deep water, or from regions beyond reach. Those listed above are really not difficult to identify, and are for the most part quite prolific within their respective ranges.

VERTIGO PYGMAEA Deshayes

N.G.

There are now some further records of this tiny introduced species;

1. A single specimen found in leaf litter taken from a small area of bush on the northern shore of the Hokianga Harbour, not far from Pungaru. Size, 1.75mm. x 1.1mm.

This is normally a pasture species and not found in forested areas.

2. A number of examples were obtained by Mrs. P. Mayhill in a limestone crevice, three inches above pasture, in the area across from Raglan Harbour known as Te Akau. One lot was collected in May and further examples obtained in August. The specimens are about the same size as the ones listed above.

3. More have been found by Mr. B. Hazelwood on the Mannering farm at Waikaratu, and these too were found in a similar situation.

Mrs Mayhill writes, "It is of interest to note that the block of land from Waikato Heads to Raglan was one Station in 1840, and the port of entry, was Raglan. The cattle were then later shipped across the harbour and driven to Ohau to sale yards there."



The species is probably well established in this area. The original record is that of a single specimen, collected by Mr. A. K. Hipkins ~~from~~, of all places, shell sand which was gathered up at McGregor's Bay, Whangarei Heads, some years ago. The latest examples have been checked and seem quite typical in size. The apertural lamellae are normal.

BULLETIN No.2, Conch. Sec. Auck. Inst. & Mus. June 1977, is now available, and contains the following Papers;

FOSSIL HISTORY of LIMARIA ORIENTALIS in NEW ZEALAND

A.G. Beu,
N.Z. Geo. Survey, D.S.I.R.
Lower Hutt.

A NEW FLAMMULINID LAND SNAIL FROM THE NORTHERN BLOCK of NORTHLAND, (ENDODONTIDAE: PHENACOHELICINAE).

N.W. Gardner.

A MACRO - and MICROSCOPIC EXAMINATION of BULLA QUOYII GRAY in DIEFFENBACH (MOLLUSCA; OPISTHOBRANCHIA).

R.C. Willan,
Zoo. Dept. Univ. Auck.

A STUDY of SCUTUS ANTIPODES MONTFORT (GASTROPODA: FISSURELLIDAE)

Walter O. Cernohorsky.
Auck. Inst. Mus.

CORRECTION to the NOMENCLATURE of BULLIA (GASTROPODA: NASSARIIDAE)

Walter O. Cernohorsky.
Auck. Inst. Mus.

NOTE on TWO PACIFIC GASTROPODS

Walter O. Cernohorsky.
Auck. Inst. Mus.

Obtainable from—

The Secretary,
Conchology Section of the Auckland
Institute and Museum.

Editors; N. & N. Gardner
6 Tui Glen Rd.,
Birkenhead,
Auckland, 10.
New Zealand.

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POIRIERIA



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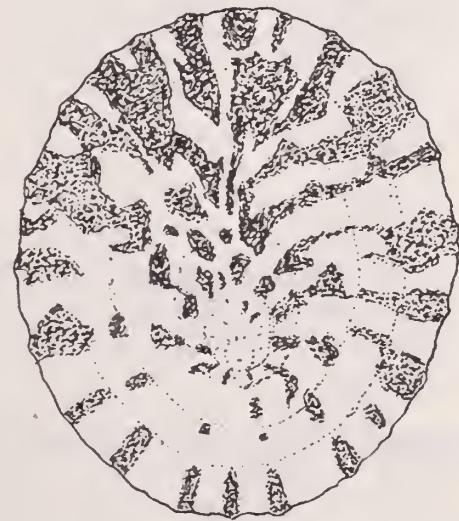
Part 4.

April, 1978,

NOTES ON KAIKOURA LIMPETS

B. Elliott.

The rocky coastline of the Kaikoura Peninsula is a good area for Limpet-like shells, over twenty species being present, many of which grow to larger than average size. Cellana denticulata is both the largest and the commonest of these. It is abundant everywhere, fine specimens often reaching 70mm. in size, with a few attaining 80mm. Cellana radians is also common, with beautifully patterned specimens averaging about 50mm. One magnificent Cellana radians forgot to stop growing and when I found it, measured 68mm., in perfect condition, with not even a speck of corrosion on the apex to show that it was growing old.



CELLANA DENTICULATA

(INTERIOR)

SECOND POINT, KAIKOURA PENINSULA

NATURAL SIZE 80 X 67MM 30

CELLANA RADIANA

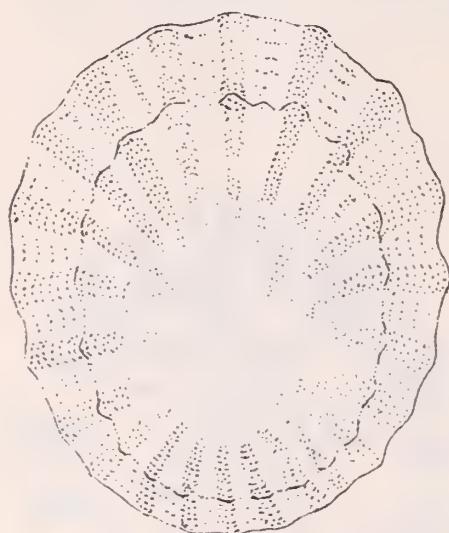
SOUTH BAY, KAIKOURA 16-11-77

NATURAL SIZE 68 X 57MM

Along with the patterned radians, is the form called argenteus in older shell books, usually plain dark-coloured on the outside, and shining silver on the inside; also the greenish-yellow form perana is occasionally found.

Cellana flava is abundant in some places, many of them coloured a brilliant golden-orange, and attaining 50 to 60mm., while a few old timers with paler colouring reach 70mm. Cellana ornata is fairly common in exposed places; fine clean specimens up to 56mm. in size.

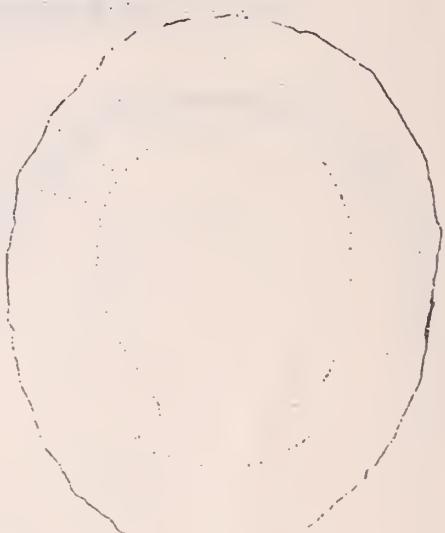
Cellana strigilis redimiculum also prefers exposed places, with large clean specimens up to 68mm., but less common than the other species of Cellana. Cellana stellifera is small and rare here, and found only at extreme low tide. With marine growth covering the star pattern on the apex, it is sometimes very difficult to distinguish it from C. "argenteus", which has exactly the same shell colouring - plain dark brownish-grey on the outside, and silver, inside. But they can be distinguished by the colour of the narrow margin on the foot of the animal - bright golden orange in stellifera, and greenish-yellow in radians. The form phymatius, with its prominent white ribs, does not appear to be found here.



CELLANA STRIGILIS REDIMICULUM

ATIA POINT, KAIKOURA PENINSULA

NATURAL SIZE 68 X 53 MM

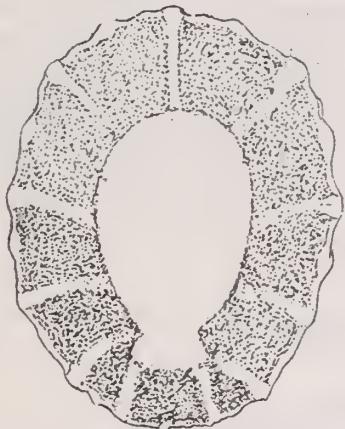


CELLANA FLAVA
(INTERIOR)

ARMER'S BEACH, KAIKOURA

NATURAL SIZE 71 X 58 MM

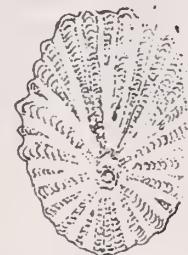
Among the Acmaeidae, the largest and commonest species is Patelloida corticata, with the star shaped form corallina, a little less common. These are abundant everywhere on low tidal rocks, and often attain 25 to 30mm. with a few up to 33mm. Radiacmea inconspicua is fairly common on rocks at extreme low tide and often on Haliotis iris shells.



CELLANA ORNATA
(INTERIOR)

SECOND POINT, KAIKOURA PENINSULA

NATURAL SIZE 56 X 45 MM



PATELLOIDA CORTICATA

KAIKOURA PENINSULA

NATURAL SIZE 33 X 25 MM

Notoacmea piloopsis sturnus surprisingly, does not seem to like Kaikoura's exposed coastline and although they usually flourish in this sort of environment, they are uncommon, small and in poor condition, living at high tide on steep rock faces. Notoacmea daedala, up to 13mm., is fairly common living under intertidal stones. Notoacmea helmsi is small and uncommon, since the muddy areas it prefers are limited in size. On these small mudflats are patches of sea-grass where I have searched long and hard for Notoacmea helmsi scapha, but without finding a single live specimen in what appears to be an ideal environment. Notoacmea parvicornoidea is fairly common, especially on mussels, but often overlooked because of its small size and inconspicuous colouring. I have found two specimens of Notoacmea virescens, one alive, the other in shell sand; an attractive little limpet with brown stripes on a white background. Notoacmea scopulina is fairly common in very limited areas, on exposed rock faces.

These are nearly always badly eroded or encrusted, and are difficult to distinguish from P. corticata, but the sole of the foot is a slightly deeper shade of orange. Asteracmea suteri I have not found alive here, but it is quite common in shell-sand. Atalacmea fragilis is not common, under inter-tidal stones.

The most interesting of the Fissurellidae is undoubtedly Montfortula rugosa. Although it is restricted to very few localities, it is fairly common in inter-tidal rock pools on the more exposed parts of the Kaikoura peninsula; but only in a certain type of pool, and after a while one can almost tell at a glance whether there will be Montfortula there or not.



MONTFORTULA RUGOSA

EAST BEACH, KAIKOURA PENINSL

NATURAL SIZE 13 X 1MM

The pool must be rather small and bare, and if one looks very carefully, these inconspicuous little greenish limpets will be seen. They do not attain the size of Australian examples, which grow almost to one inch; the largest one I have seen at Kaikoura was 13mm. Large Scutus breviculus occur commonly in rock crevices at very low tide; the solid white shell attaining a length of some 70mm., is internal in a large black animal about 175mm. in size. Tugali elegans and Tugali suteri are both rare here and I have not yet found either of them alive.

Benhamina obliquata is fairly common in rock crevices at high tide, attaining a size of 67mm. Siphonaria zelandica is common everywhere, sometimes reaching 30mm. Siphonaria cookiana is less common, and easily overlooked. Growing from 12 to 14mm., it looks just like a small zelandica, until one looks very closely. Recently, while visiting the Seal colony, I found S. zelandica, S. cookiana, Montfortula rugosa and fine large Notoacmea parviconoidea, all living together in one small pool. In exposed areas, Gadinalia nivea is quite common on the roofs of rock caverns - another small 'limpet' which is easily overlooked.

Last, and also least are two tiny elongated limpets found in shell sand at Armers Beach. Least in size they may be, but certainly not least in my efforts to find them alive. At first I thought they were Notoacmea helmsi scapha, but, as already mentioned, my efforts to locate this species have been in vain. Then I decided they must be Gundlachia, since the shell sand

contained other fresh water species, - Planorbis, Potamopyrgus and Sphaerium. And so, a visit to "Stink Swamp" became necessary, a most revolting place inhabited by about twenty pied stilts, which soundly scolded me for invading their territory. They need not be concerned that I might be a frequent visitor! Although I felt quite sure that no self-respecting mollusc would live there, I found a few dead Potamopyrgus and Planorbis with the aid of a sieve, Anyone observing me wading in thick black stinking mud, would have good reason to conclude that I had taken leave of my senses. - particularly if they had seen me a little later in a nearby creek, down on hands and knees in the middle of a patch of watercress! Here were plenty of living shells - plenty of Potamopyrgus, while Planorbis and Sphaerium were not uncommon. But not a trace of Gundlachia, although it seemed to be an ideal environment for them. Two more visits to Armers Beach have failed to show any sign of these elusive little freshwater limpets, so at present Gundlachia remains a doubtful species on the checklist of Kaikoura limpets.

— oOo —

THE AUCKLAND SHELL SHOW (THE FIRST).

R.C.Willan.

The first Shell Show to take place in New Zealand was held in the North Shore Teacher's College Caf., Northcote, over the weekend of 21st., 22nd. January 1978. This probably attracted more shellers than have ever been brought together at one time in New Zealand and we were especially pleased to greet members and old friends from Whangarei and Christchurch who had come just for the show. The Show attracted large crowds throughout both days and it was soon apparent that a more suitable venue than the College Cafeteria and Lounge could not have been found. Approximately 1,200 visitors saw the show and takings have considerably augmented the Conchology Section's publication fund. Both exhibitors and visitors were unanimous in their praise for the organizers' hard work, the excellent quality of specimens on display and the high standard of displays themselves. There were approximately 150 entries, with entries being received for almost all of the competitive classes. Some of the classes of popular overseas shell families such as cowries, cones, murex and strombs had up to twelve entries.

Despite the number of entries for classes of foreign shells, those entering shells for the New Zealand sections put up extremely presentable displays. Dr Powell who judged these sections was most impressed. Bob Penniket gained three first prizes (for Cymatiidae, Cassidae, Pectinidae), Norman Douglas won the sections for Haliotidae, West Coast shells and Deep Water shells - the latter exhibit was graced by his superb shell of Pachymelon benthicola. Norman Gardner won the sections for Volutidae and Land Snails.

Hunt and Molly Seelye won the Cypraea section with a display of large cowries, all being tones of brown and resting on a deep green background material. Three Cypraea aurantium glowed from adjacent trays in this section. Derek Lamb had a well-deserved win in the Conidae; Derek had done so much of the initial organization for this show, it was a great pity that he was unable to be present because of being in hospital. Joan Coles won the sections for large volutes and small Muricidae, Pat Vause won four classes of foreign molluscs. Pat's entry also won the Shells of One Colour section - a magnificent exhibit of white shells on a pale blue background; she had chosen shells that complimented and contrasted with each other, covering the range of sculptural and textural extremes that molluscs are able to produce; from the fragility and smoothness of an Argonauta nodosa to the crisp perfection of Murex alabaster and Latiaxis spp. to the simple form of a Neptunea antiquata. Highly commended was awarded to an entry of golden shells on a green satin background. The Pectinidae is a logical group in which to enter specimens showing colour variation, so it was no surprise that all three winning entries were of representatives of this family - 1st. O. Snook, with Chlamys zelandiae, 2nd. Bob Penniket with Chlamys opercularis, 3rd. Esther McKenzie with Chlamys dieffenbachii. My most difficult task was judging the 'Shells of One Country' section; Pat Vause was first (Japan), second equal were Damaris Hol (New Hebrides) and Mary Sanson (New Zealand), third was the Rigden Family (Australia).

Anne Randall won both a first and second for best picture in the Shell Art section. Miss J. Livingston, who kindly judged all the art sections, considered V. Firth's jewel box covered with shells as the best object of shell art. P. M. Spencer won the Shell Drawing section with his coloured still life of a group of New Zealand shells, Norman Douglas and Margaret Morley were second equal with their excellent black and white drawings of living gastropods; Septa parthenopea and Alcithoe arabica respectively. Norman Douglas won the section for Photographs of shells. In a hall filled with entries of molluscs' shells, Norman's photographs of living nudibranchs provided a well-planned contrast.

The non-competitive displays were of equally high standard to those in the competitive sections. And because shells entered in competitive classes could only carry their name and country of origin those of the display classes were frequently of greater public interest because of their information content and obvious effort that had gone into construction of these displays. Jim Goulstone had drawings of land snails together with samples of each species.

Mrs. Pearce's little shell animals were the highlight of the visit for many children, and considering the success of the sales table, it was a pity that more of these quaint shelly creatures were not for sale to the public. Other displays were of New Zealand corals and oysters, world Tonna species, poisonous cone shells, fossils, cephalopods and giant Tridacna shells. We were grateful to the North Shore Aquarium Society for their exhibit of tropical fish and a colourfully planted terrarium.

For a display in New Zealand, the numbers of rare overseas shells, all of gem quality, was stunning - some of the choicest items being; Pleurotomaria (Perotrochus) teramachii, P. (Mikadotrochus) hirasei, Galeocerys leucoderma, Lambis violacea, Conus circumcisus, C. bullatus, Murex alabaster, Strombus goliath, S. taurus and no less than nineteen S. listeri.

The Shell of the Show award has to be left until last. Although there were fifteen entries, the judges were unanimous that the best single specimen was a magnificent, large Tonna cerevisina. Kevin Burch from Whangarei had taken it live in November 1977 in only six feet of water; its live weight was 6lb. 2ozs. It is very appropriate that the Shell of the Show should have been taken by a New Zealand shell and demonstrates just how well our shells can hold their own in competition with overseas specimens.

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OBSERVATIONS ON PATELLID LIMPETS

IN the NEW HEBRIDES.

D.H.Baker.

During an assignment to the New Hebrides in 1976, I managed a few brief opportunities to examine the foreshore and in three of the localities visited, volcanic rock was the main constituent of the shoreline. In two of these areas, an interesting Cellana was found which could prove to be similar to that recently recorded from American Samoa by Mr. N. Gardner, and having what appears to be an affinity with one of the Japanese species, Cellana toreuma.

The first of the three areas examined, was on the Island of Tanna. A search was made on the volcanic rock two miles south of Lenakel on the west coast of the island, for Cellana pricei Powell; previously recorded in this area. This is a weather coast with no protecting reef, so the constant swell breaking on the rocks with some force, made an examination difficult, particularly as I was unable to choose my time and tides. After four searches, including one at night, one specimen was located in a rock runnel, which was covered by each incoming wave. Because of this position, this specimen was very depressed. Nearby was a Patelloidea saccharina Linne; the only other limpet observed. During the night search, I was interested to see a two-foot eel bounding out of pools and slithering across rocks out of the water in pursuit of crabs, which it was catching with some success.

The next locality, was the island of Epi some 60 miles north of Vila. The west coast of this island, where I was located, is mainly coral-in formation, but I managed a quick visit to the east coast, opposite the 4700ft. island volcano of Lopevi, where the rocks are of volcanic origin. C. pricei was found here on the face of a huge volcanic rock imbedded in a coral matrix.

They were at about mid-tide level, a little below a specimen of Patella flexuosa Q&G, and specimens of Patelloida saccharina. In size they ranged up to 36mm. x 30mm.

A little further along the bay, in a slight depression, but above low tide mark, there was an area of smooth rounded basalt boulders, dense black in colour and about 15" in diameter. On the undersides of these I found three specimens of Cellana testudinaria Linne, the largest 58mm.x 48mm. they were in isolation, one specimen only per rock. The ribbing was so fine they appeared smooth, and in colour matched the dark rock perfectly. In all respects the sculpture, dimensions and internal colouring were typical of the species. Under two of the rocks, again one specimen per rock, there was a much thinner, frailler species, elongated and also lighter in colour by comparison with testudinaria. They called to mind specimens of C. toreuma Reeve, which I have from Kii in Japan. On comparing these specimens with Japanese examples there are some minor differences, but the general characteristics appear to be those of toreuma. As I am not familiar with the degree of variation within this species in its normal range, I am not in a position to know whether these differences are significant.

Both specimens are large, measuring 38mm.x28mm.x8mm. They tend to have rounded rather than sub-parallel sides, but still have that narrow look of toreuma. They are a greyish buff in colour with dense, fine, radial sculpture, but not as rugose as the Japanese specimens. The internal surface is silvery with a reddish-brown boldly rayed pattern showing through the shell, and a chestnut spatula clouded over with white towards the anterior end.

In the northern part of the Group, on the eastern tip of Aoba, facing Maewo, another volcanic area, I found a few further examples, smaller in size and displaying a more mottled pattern. These were found on a vertical face on black volcanic rock in association with small specimens of C. pricei. A large rock had split in two and the specimens were on the two inner surfaces of the cleft, shielded from the sun, but exposed to the heavy swell, to the extent that it was necessary to strip off to get them. This was the only place I found limpets in this area, although I examined a twenty foot rock face below low tide mark. In a similar place on the east coast of Coromandel, one would find C. stellifera. It is understandable why they do not live on rocks exposed to the sunlight and rain at low tide, but there were other locations which seemed to be suitable, though were apparently quite bare.

In a neighbouring bay, an extinct volcano vent now breached by the sea, there was an absence of suitable boulders to examine, but from indications in the black sand drift, limpets obviously exist in the bay. There were however no signs of C. testudinaria. In 1938, I visited the same bay and a cursory examination of the rocks at that time revealed no obvious signs of limpets. It seems that in these tropical localities, the right conditions for Patellid limpets are very limited, even within a particular locality.

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NOTES of INTEREST

The pacific Oyster, Crassostrea gigas Thunberg, is apparently still rapidly expanding its area of distribution. It is now established in several areas around the northern shore of the Waitemata Harbour. Typically frilly juvenile specimens of 4 - 5cm., are now quite common at Island Bay (20-2-78).

Further up the coast at Mahurangi, where this oyster has been established now for some years, large specimens are beginning to show up on rocks and rocky shelves away from the oyster farms where they are systematically harvested at a small and tender stage. Specimens of up to 160 c.m., are not uncommon now.

Recently Mr. Bob. Penniket came across a large single specimen firmly attached to a rock on the Coromandel Coast.

Mrs. P. Mayhill reports observing and photographing two adult, live Paryphanta, on Mt. Egmont, while she was on a recent tramping trip, and on the Mangorei Track saw specimens of Allodiscus granum, A. chiron, A. miranda, A. tesselata, Gennoropa huttoni, Therasia traversi, Suteria ide, Schizoglossa novaezelandiae, Flamoconcha n. sp., and Charopa pseudoleioda - all in and under logs; in the litter were only two extremely small Paralaoma (Weaver Clearing). Suteria ide was living at 4600 ft., so obviously does not mind cold temperatures.

Something you didn't know about our Paryphanta Snails !
A.R.Wallace,in "Darwinism", Colonial Edition,P.433. - "In New Zealand, the prickly Rubus is a leafless trailing plant and its prickles are probably a protection against the large snails of the country, several of which have shells from two to three and a half inches long."

Laing and Blackwell in "Plants of New Zealand" -
" Rubus is one of the commonest species on the edge of the forest and the snails referred to, belong to a rare and disappearing species, seldom if ever found in the neighbourhood of Rubus."

(Paryphanta hochstetteri in particular, and also the northern P. busbyi, are both sometimes found on the edge of the Bush - under logs covered in Rubus etc. Fern and Rubus, the bush-lawyer, made a dense covering for Paryphanta on Takaka Hill some years ago. Ed.)

A collector in American Samoa writes; -
" We are having an invasion of Crown of Thorns Starfish. Our particular area is only mildly infested and we have killed several hundred. However, in nearby areas, natives have caught well over 7000."

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TRIP TO THE LOYALTY ISLANDS.

J.Coles.

In August 1976 a group of Auckland members of the Conchology Section, flew over Ouvéa in the Loyalty Islands, and the view of long sandy beaches and an extensive lagoon, suggested that this might be an interesting area to visit on a shellling trip. Later investigations revealed that suitable accommodation was available, so it was decided to arrange for a few days in Noumea and a stay of 10 days on Ouvéa. Finally a group of five - Mr. & Mrs. Town, Mrs. Hole, Mr. Crosby and I, departed on a U.T.A. flight on July 26th, leaving behind several very disappointed members whose commitments prevented them from joining the group. A short stay in Noumea gave us the opportunity to visit Anse Vata beach and spend an enthralling hour at the Marine Aquarium. On our return, we explored the Baie des Citrons, visited some of the bays south of Noumea and saw some of the rugged country on the road to Yaté.

Early on the second morning, our plane left Magenta Airport and by 7 a.m., we had landed at Ouvea. During the flight we were enthralled by the wide variation in cloud formations, a spectacular red sunrise and views of other islands in the group.

The Loyalty Islands, administered by France, lie in a chain parallel with the east coast of New Caledonia and approximately 50 miles distant. The group consists of three larger islands - Ouvea, Lifou and Mare, together with many small islands. Ouvea is the most northerly in the group and lies within a 20°-21° Latitude, giving it a northerly position approximating to Mackay in Queensland.

The islands are of limestone formation but except for impressive cliffs guarding each side of the entrance to Lekin Bay, the island is low and crescent shaped with miles of sandy beaches. It is approximately 30 miles long and a maximum of 4½ miles wide. It is well wooded, with coconut palms predominating. There are many villages, the native people being of Melanesian and Polynesian races, with a total population of about 5000. A sealed road connects Fayahoue in the south with St. Joseph in the north. The main export is copra. Yams, taro, bananas and other tropical fruit and vegetables are grown. Land tenure is restricted and part of the island is a Reserve.

Both Catholic and Protestant missionaries have been active for over 100 years and there are a number of large churches and school buildings. French is the main language together with native dialects. There is a resident Doctor and a dispensary and small hospital. Medical care is free.

Native style huts in a wide variety of shapes, and with variations in the plaited walls and modes of thatching, provide homes for most villagers. But we were interested to find that a New Zealand firm was building homes there.

Accommodation at the Relais d'Ouvea, situated at Fayahoue, about 7 miles from Lekin Bay, is provided in the native - style huts called fares. Each is self-contained, very plainly furnished but adequate for one's needs. These are set in a beautiful tropical garden which enchanted us on our arrival, as the sun was shining brilliantly on the poinsettias and other colourful plants. The beach and an incredibly blue sea were only a few yards away. The small islands of the outer reef of this lagoon, can only just be seen, so the impression from the beach, is more of the open sea than of a lagoon.

As soon as possible we were on the beach where we were delighted to find a good washup of shells. First impressions were of Quantities of Phos senticosus, many in fresh condition, and large numbers of Bulla ampulla.

During the morning we were taken to visit Lekin Bay, where the low tide allowed us to cross the wide sandy flats and reach the reef. In this bay Lambis lambis can be found, Strombus gibberulus and luhuanus abound and a number of the larger Terebras can be tracked in shallow water. Naticas are also present. Cerithium clava was found and a good specimen of Malea pomum. The whole area is full of interest as there is an extensive area of protected beach, a small wharf and rocks used in its construction; and also a wide area of more open beach. Land crabs appeared much less common than in the New Hebrides, but a few were seen in the vegetation on the sand dunes. One provided me with a good specimen of Lophiotoma acuta. Banks near the beach are crumbling and expose large numbers of Placostylus. Live Specimens also occur in this area, where the headland is well wooded. Former alterations in sea level, have left small caverns in the limestone rocks and a small Chapel occupies one of these areas.

My first find on reaching this beach was a Nautilus macromphalus, broken, but treasured, as it was the only one found. This species is confined to the New Caledonian region. We visited this area on two subsequent occasions - once, alas, on a very wet and quite coldish windy day, much more like New Zealand than the tropics, but on each occasion we added to our collections.

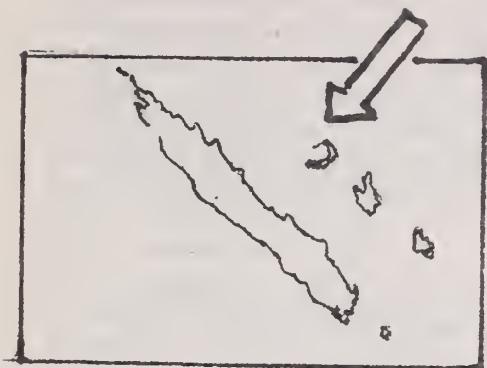
We covered a number of miles of the sandy beach north and south of Fayahoue. I think the greatest thrill for us all was picking up good specimens of Terebellum terebellum each time we visited the beach. Some were in very fresh condition, with a wide variety of markings. We were amazed at the prevalence of Bulla ampulla and vernicosa. Bulla punctulata were also found and an occasional Bulla angasi. We noticed that although many Bulla ampulla were well coloured, there were considerable numbers of white ones which appeared reasonably fresh. Pupa, Atys and Haminoea were common, and among seaweed, specimens of the large frail Akera soluta, Hydatina physis and Amplustre amplustrum were found.

Pyrenids were also plentiful and attractively coloured. It is interesting to note that Pyrene flava was given the name "ouveana" by Heuvier in 1899 and Pyrene scripta "ouveensis".

A visit to Matua Island, one of the nearer islands of the Reef, about $\frac{1}{2}$ hrs. journey in a fast boat, gave us the opportunity to view coral and collect in a more rocky area. Here we saw a well camouflaged fish, resting on a rocky platform. We gave it a wide berth, as it resembled the poisonous stone fish.

A Toyota station wagon was available from the Hotel and this enabled us to see more of the island and cover most of the sandy beaches, but we were unable to collect on the south-east coast.

LOYALTY ISLANDS. NEW CALEDONIA....



... LAGOON ...

OPEN SEA.

HOTEL

LEKIN BAY

.. THE ISLAND OF OUVEA.

White
- Sandy - Beach

The day before our departure we met a shell collector who gave us a number of good specimens and also took us to a large limestone quarry which abounded in fossils. Some were imbedded in compacted sand, were easily removed and in some instances still retained some of their original colour. Others appeared older, were imbedded in harder limestone and showed evidence of mineralisation. A wide range of species was represented and many were in perfect condition.

Although cool and windy conditions restricted snorkling and fuller exploration of the lagoon, we were able to find over 150 species of shells, during our stay, including;

GASTROPODA.

| | | | |
|---|-------------------|--|------------------|
| <i>Stomatia phymotis</i> Helbling. | <i>Ouvea.</i> | <i>Turbo chrysostomus</i> L. | <i>Ouvea.</i> |
| <i>Phasianella aethiopica</i> Philippi. | " | <i>Umbonium vestiarum</i> L. | " |
| <i>Littorina cocinea</i> Gmelin. | " | <i>Littorina undata</i> Gray. | " |
| <i>Tectus fenestratus</i> Gmelin. | " | <i>Nerita albicilla</i> L. | <i>Matua</i> Id. |
| <i>Nerita plicata</i> L. | <i>Matua</i> Id.. | " <i>undata</i> L. | " |
| <i>Chrysostoma paradoxum</i> Born. | <i>Ouvea.</i> | <i>Liotina peronii</i> Kiener. | <i>Ouvea.</i> |
| <i>Pseudostomatella</i> | | | |
| <i>papyracea</i> Gmelin. | " | <i>Cerithium aluco</i> L. | " |
| <i>Cerithium asper</i> L. | " | <i>Cerithium clava</i> Gmelin. | " |
| <i>Cerithium fasciatum</i> Brug. | " | <i>Cerithium lifuensis</i> Mel. & Stn. | " |
| <i>Cerithium piperatum</i> Sby. | " | <i>Cerithium rostratum</i> Sby. | " |
| <i>Cerithium lolumna</i> | | | |
| <i>forma proditum</i> Bolye | " | <i>Cerithium sinensis</i> (Gmelin) | " |
| <i>Cerithium zonatus</i> (Brug.) | " | <i>Otopicula mitralis</i> (A. Adams) | " |
| <i>Otopicula nodicincta</i> (A. Adams) | " | <i>Pyramidella sulcata</i> (A. Ad.) | " |
| <i>Lambis lambis</i> L. | " | <i>Strombus gibbeulus</i> L. | " |
| <i>Strombus luhuanus</i> L. | " | <i>Strombus mutabilis</i> Swain. | " |
| <i>Terebellum terebellum</i> L. | " | <i>Epitonium marmoratum</i> Sby. | " |
| <i>Heliaetus variegatus</i> Gmelin. | " | <i>Philippa radiata</i> Roding | " |
| <i>Trigonostoma scalariformis</i> Lam. | " | <i>Cypraea annulus</i> L. | " |
| <i>Cypraea erosa</i> L. | " | <i>Cypraea lynx</i> L. | " |
| <i>Cypraea mauritiana</i> L. | <i>Matua</i> Id. | <i>Cypraea moneta</i> L. | " |
| <i>Cypraea caputserpentis</i> L. | <i>Ouvea.</i> | <i>Cypraea arabica</i> L. | " |
| <i>Cypraea vitellis</i> L. | " | <i>Natica gaulteriana</i> Recluz. | " |
| <i>Natica onca</i> Roding | " | <i>Natica robillardi</i> Sby. | " |
| <i>Polinices auranticus</i> Lam. | " | <i>Polinices melanostomus</i> (Gm.) | " |
| <i>Malea pomum</i> L. | " | <i>Gutturnium muricinum</i> Rod. | " |
| <i>Distorsio anus</i> L. | <i>Matua</i> Id. | <i>Bursa rhodostoma</i> (sby.) | " |
| <i>Phos senticosus</i> L. | <i>Ouvea</i> | <i>Engina</i> sp. | " |
| <i>Murex brunneus</i> Link. | " | <i>Murex scorpio</i> L. | " |
| <i>Thais armigera</i> Link. | <i>Matua</i> Id. | <i>Morula chaidea</i> (Duclos). | " |
| <i>Morula fragum</i> Blainville | <i>Ouvea.</i> | <i>Morula granulata</i> (Duclos) | " |
| <i>Morula margariticola</i> (Brod.) | " | <i>Favartia brevicula</i> Sby. | " |
| <i>Cronia contracta</i> | " | <i>Drupa ochrostoma</i> (Blain.) | " |
| <i>Drupa ricina</i> L. | " | <i>Mitrella albina</i> Kiener | " |
| <i>Mitrella ligula</i> (Duclos) | " | <i>Purpura persica</i> L. | " |

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|------------------------------------|-----------|-------------------------------------|
| <i>Vasum turbinellum</i> L. | Ouvea. | <i>Pyrene flava</i> (Brug.) Ouvea. |
| <i>Pyrene punctata</i> (Brug.) | " | <i>Pyrene scripta</i> Lam. " |
| <i>Pyrene turturina</i> Lam. | Matua Id. | <i>Cantharus fumosus</i> Dill. " |
| <i>Nassarius conoidalis</i> Desh. | Ouvea. | <i>Nassarius crematus</i> Hinds. " |
| <i>Nassarius delicatus</i> A.Adams | " | <i>Nassarius gaudiosus</i> Hinds. " |
| <i>Nassarius glans</i> L. | " | <i>Nassarius graniferus</i> |
| <i>Nassarius horridus</i> Dunker | " | <i>Nassarius pauperus</i> Gould " |
| <i>Oliva miniacea</i> Roding | " | <i>Mitra amaura</i> Hervier " |
| <i>Mitra cucumerina</i> Lam. | " | <i>Mitra exasperatum</i> (Gme.) " |
| <i>Mitra lugubris</i> Swain. | " | <i>Mitra mitra</i> L. " |
| <i>Strigatella crassa</i> (Swain.) | " | <i>Strigatella tiaconica</i> Rve. " |
| <i>Pterygia crenulata</i> Gme. | " | <i>Daphnella reeveana</i> Desh. " |
| <i>Lophiotoma acuta</i> Perry. | " | <i>Clavus unizonalis</i> Lam. " |
| <i>Conus catus</i> Brug. | " | <i>Conus chaldeus</i> Roding. " |
| <i>Conus coronatus</i> Gme. | " | <i>Conus flavidus</i> Lam. " |
| <i>Conus geographus</i> L. | Matua Id. | <i>Conus leopardus</i> Rod. " |
| <i>Conus litteratus</i> L. | Ouvea. | <i>Conus lividus</i> Hwass. " |
| <i>Conus miles</i> L. | " | <i>Conus miliaris</i> Hwass. " |
| <i>Conus nussatella</i> L. | " | <i>Conus pulicarius</i> Hwass, " |
| <i>Conus textile</i> L. | " | <i>Conus tulipa</i> L. " |
| <i>Terebra affinis</i> Gray. | " | <i>Terebra dimidiata</i> L. " |
| <i>Terebra subulata</i> L. | " | <i>Terebra textilis</i> Hinds " |
| <i>Terebra areolata</i> L. | " | <i>Terebra chlorata</i> Lam. " |
| <i>Terebra guttata</i> Roding. | " | <i>Bulla ampulla</i> L. " |
| <i>Bulla vernicosa</i> Gould. | " | <i>Bulla punctulata</i> A.Adams. " |
| <i>Bulla angasi</i> Pijsbry. | " | <i>Atys alveola</i> Souverbie. " |
| <i>Pupa nitidula</i> L. | " | <i>Pupa sulcata</i> Gmelin. " |
| <i>Akera soluta</i> (Gmelin.) | " | <i>Haminoea</i> sp. " |
| <i>Aplustrum amplustre</i> L. | " | <i>Hydatina physis</i> L. " |
| <i>Smaragdia viridis</i> Rang. | " | |

BIVALVIA

| | | |
|--------------------------------------|------------|---------------------------------------|
| <i>Anadara antiquata</i> (Dill.) | Ouvea | <i>Vosella nitida</i> (Reeve) Ouvea |
| <i>Pteria</i> sp. | " | <i>Gloriapecten pallium</i> L. " |
| <i>Diplodonta</i> sp. | " | <i>Coelomactra antiquata</i> Speng. " |
| <i>Tapes litterata</i> L. | " | <i>Gafrarium dispar</i> Dill. " |
| <i>Donax</i> sp. | " | <i>Tellina virgata</i> L. " |
| <i>Tellina staurella</i> Lam. | " | <i>Tellina vulsellata</i> Hanley " |
| <i>Spondylus</i> sp. | " | <i>Asaphis violaceus</i> Forskal " |
| <i>Quidnipagus palatum</i> Ire. | " | <i>Frimbia frimbriata</i> L. " |
| <i>Codakia tigerina</i> L. | " | <i>Atactodea striata</i> " |
| <i>Fulvia tenuicostata</i> Lam. | Lekin Bay. | <i>Cardium elongatum</i> Brug. " |
| <i>Laevicardium biradiatum</i> Brug. | " | <i>Fragum fragum</i> L. " |
| <i>Fragum unedo</i> L. | " | |

CEPHALOPODA

Nautilus macromphalus Sowerby. Lekin Lagoon.

Shells, colour slides and prints are tangible reminders of a most enjoyable trip. Memories of beautiful surroundings, a relaxed way of life, interesting fellow guests, fine French cooking, will also remain. Attractive children, gleefully accepting sweets and marbles, listening patiently to our stilted French, and adding to our collection the tiny Smaragda viridis will also be recalled with affection. Our chief cause for concern was the thought of what our fellow Conchologists would have said if they could have seen us all at a meal, on two occasions, each with a plate of ten of the large Placostylus from the Isle of Pines !

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I wish to acknowledge the assistance of Mr.W.O.Cernohorsky in the identification of specimens.

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MOLLUSCS FROM the CHANNELS of PARENGARENGA

HARBOUR.

N.W.Gardner.

New Zealand's most northern harbour, situated just below North Cape, has always attracted collectors of sea shells as there seems to be a belief that the further north one goes, greater is the chance of finding rare species. therefore, the Parengarenga Harbour gets a considerable amount of attention.

Although quite a sizable harbour, it is not a deep one; its numerous arms running up into fairly low countryside are little more than tidal sand and mud flats. No rivers of any size drain into it, though there are a few small streams. Even the main channels, which drain the extensive flats, are not really deep and are well defined at low tide levels. The entrance is comparatively narrow, with a considerable tidal race, and it has a bar of unpleasant character.

In the past, on several occasions, some dredging for specimens has been done, but apparently no comparative list of material is available. The main purpose of this paper is to

present such a list of species found to be present in a series of bottom samples taken recently in the main channel between Dog Island and the Heads while checking on the occurrence of the Myochama tasmanica (T.Woods.), a small bivalve featured in Poirieria vol.8, part 3, 1976, and which attaches itself to the empty valves of Tawera spissa or other bottom debris.

In parts of the main channel, there are quite large groups of the vermetid Novastoa lamellosa. These frequently came up in the dredge in clumps. From this area too, great numbers of Zethalia zelandica were brought up - active molluscs which thrashed about when the dredge was emptied. All specimens were of rather small size. The large number of dead Tawera spissa shells provided ample shelter for the low conical cap shell Zegalerus tenuis, which was present in hundreds, but again, all small, the size being about 10mm. to 12mm.

Although Zeacolpus pagoda occurs commonly along the outside ocean beaches, only a few sub-adult shells seemed to be present in the areas in which we dredged.

Quite considerable numbers of the tiny commensal bivalve Arthritica bifurca Webster, were present in the dredgings, indicating that its host, the Polychaete sand-mason worm, must be there in some numbers too. Some were brought up in the dredge. This species of Arthritica is recognised easily by the two distinctive whitish areas of thickening on the inside of the shell below the hinge.

The harbour has quite extensive Zostera flats, and it is doubtlessly from these that the dead specimens of the tiny limpet Notoacmea helmsi, of the elongated scapha form, have found their way into the deeper channels.

The shoreline does not support much in the way of a rock oyster population due, no doubt, to the lack of much hard rock on which spat might settle. In places there is some soft peaty sandstone, which is not at all suitable. However, in the deeper channels, a small variety of Ostrea, not unlike the Stewart Island oyster, O. lutaria, exists. This attaches itself to bottom debris, as does the species from Stewart Id., and Foveau Strait, but in Parengarenga Harbour does not seem to grow beyond 25mm. Perhaps it is not happy in such a location. The shell has a raised lip, is somewhat 'cupped', without colour pattern, and looks very much like the southern O. heffordi.

While there is quite a sizable list of species in the dredgings, many specimens are old, representing accumulations that have lain in the channels and runnels for some time. The fauna is typically one of shallow water, with few surprises;

SPIRITS BAY.

NORTH
CAPE

..... PARENGARENGA HARBOUR

Te Hapua

Coal Pt.

Paua

BOTTOM SAMPLES :



some species have no doubt drifted in from other areas where they had been living.

List of species noted, with some comments.

GASTROPODA

| | |
|---|--------------------------|
| <i>Notoacmea helmsi</i> (Smith) : | not uncommon. |
| <i>Notoacmea</i> " <i>scapha</i> Forma | odd specimens. |
| <i>Notoacmea subtilis</i> (Suter) | not uncommon. |
| <i>Asteracmea suteri</i> (Iredale) | several. |
| <i>Microlenchus rufozonus</i> (A. Adams) | odd specimens. |
| <i>Antisolarium egenum</i> (Gould) | " " |
| <i>Umbonium zelandicum</i> (H. & J.) | extremely common. |
| <i>Eatonella olivacea</i> (Hutton). | common. |
| <i>Eatonella limbata</i> (Hutton). | " |
| <i>Estea semiplicata</i> Powell. | " |
| <i>Estea zosterophila</i> (Webster). | " |
| <i>Rissoina chathamensis</i> (Hutton). | odd specimens. |
| <i>Rissoina achatina</i> Odhner. | one. |
| <i>Fictonoba carmosa</i> (Webster). | not uncommon. |
| <i>Merelina lyalliana</i> (Suter). | not uncommon. |
| <i>Merelina superba</i> Powell. | one. |
| <i>Assiminia vulgaris</i> (Webster). | one dead (washed down?) |
| <i>Zeacolpus pagoda</i> (Reeve). | not uncommon. |
| <i>Maoricolpus roseus</i> (Q. & G.) | odd small examples only. |
| <i>Caecum digitalum</i> Hedley. | one. |
| <i>Novastoa lamellosa</i> (Hutton). | extensive. |
| <i>Zeacumantus subcarinatus</i> (Sowerby). | odd dead shells. |
| <i>Zaclys sarissa</i> (Murdoch). | several. |
| <i>Seila chathamensis</i> Suter. | odd specimens. |
| <i>Struthiolaria papulosa</i> (Martyn). | several subadult. |
| <i>Struthiolaria vermis</i> (Martyn). | several. |
| <i>Zeradina odhneri</i> Powell. | " |
| <i>Trichosirius inornatus</i> (Hutton). | " |
| <i>Sigapatella novaezelandiae</i> Lesson. | " |
| <i>Zegalerus tenuis</i> (Gray). | very common. |
| <i>Maoricrypta monoxyla</i> (Lesson). | not common. |
| <i>Natica migratoria</i> (Powell). | odd dead shells. |
| <i>Xymene plebejus</i> (Hutton). | not uncommon. |
| <i>Cominella quoyana</i> <i>quoyana</i> A. Adams. | common. |
| <i>Cominella virgata</i> <i>brookesi</i> Powell. | local ecotype. |
| <i>Amalda australis</i> (Sowerby). | not uncommon. |
| <i>Marginella pygmaea</i> Sowerby. | numerous dead. |
| <i>Neoguraleus murdochii</i> (Finlay). | odd dead shells. |
| <i>Neoguraleus lyallensis</i> <i>tenebrosus</i> (Powell). | |
| <i>Duplicaria tristis</i> (Deshayes). | not uncommon. |
| <i>Epitonium minora</i> (Iredale). | odd specimens. |
| <i>Epitonium jukesianum</i> (Forbes). | " " |
| <i>Triphora ampulla</i> (Hedley). | " " |
| <i>Turbonilla errabunda</i> (Laws). | not uncommon. |
| <i>Turbonilla finlayi</i> Powell. | " " |

| | |
|---------------------------------------|---|
| <i>Turbonilla zelandica</i> (Hutton). | not uncommon. |
| <i>Turbonilla kingi</i> (Laws). | several. |
| <i>Turbonilla</i> sp. | wide with colour band below periphery. |
| <i>Belsa vaga</i> Laws. | not uncommon. |
| <i>Cyllichna thetidis</i> Hedley. | several. |
| <i>Retusa oruaensis</i> (Wedster). | very common. |
| <i>Aglaja cylindrica</i> Cheeseman. | several specimens. |
| <i>Limulatys reliquus</i> Iredale. | one. |

BIVALVIA.

| | |
|--|-----------------------------------|
| <i>Nucula nitidula</i> A. Adams. | numerous, but few live shells. |
| <i>Nucula hartvigiana</i> Pfeiffer. | several. |
| <i>Nucula certisimus</i> . Finlay. | numerous. |
| <i>Ostrea heffordi</i> Finlay. | several. |
| <i>Gregariella barbata</i> (Reeve). | several. |
| <i>Chlamys zelandiae</i> (Gray). | several live, plus valves. |
| <i>Felanella zelandica</i> (Gray). | common. |
| <i>Arthritica bifurca</i> (Webster), | very common. |
| <i>Myllitella vivens</i> Finlay. | common. |
| <i>Scintillona zelandae</i> . (Odhner). | one valve. |
| <i>Næolepton antipodum</i> (Filhol). | common, sanguineum form. |
| <i>Pleuromeris zelandica</i> (Deshayes). | not uncommon. |
| <i>Scapliomactra scalpellum</i> (Reeve). | one. |
| <i>Mysella tellinula</i> . (Odhner). | odd valves. |
| <i>Hiatella arctica</i> (Linnaeus). | not uncommon. |
| <i>Myochama tasmanica</i> (T.Woods). | " " |
| <i>Myadora boltoni</i> E.A.Smith. | " " |
| <i>Myadora striata</i> (Q.& G.). | " " small. |
| <i>Myadora novaezelandiae</i> E.A.Smith. | " " |

NEW PAPERS.

The Bivalve Mollusc Genus Limatula : A List of Described Species and a Review of Living and Fossil Species in the Southwest Pacific.

C.A. Fleming.

Journal of the Royal Society of New Zealand, Vol. 8. No. 1. 1978,
pp. 17 - 91.

Abstract:- About 150 named fossil and living species of Limidae grouped in the genus Limatula Searles Wood are listed.

They range from Jurassic (perhaps Triassic) to Recent and are now distributed in all oceans and seas from the Arctic to the Antarctic. The genus has not previously been subdivided, but its phylogenetic and biogeographic history can only be approached by recognizing a number of species-groups, some of which are formally proposed as subgenera, using characters of shell shape and ornament that appear to be conservative.

Four subgenera are recognized (two new) for 40 living and fossil species-group taxa from Australia and adjacent parts of the Pacific and Southern Ocean: Limatula s. str. (with several groups), Limatuletta nov. (type: L. japonica Adams), Stabilima Iredale (3 species groups) and Squamilima nov. (type: Lima hodgsoni E.A. Smith). The following new species and subspecies are proposed: L. trulla arcis (Oligocene, New Zealand and Victoria), L. powelli (Recent, New Zealand, New South Wales and South Australia), L. p. raoulica (Recent, Kermadec Islands), L. pontis (Upper Eocene, New Zealand), L. vigilis (Recent, New Zealand), L. acherontis (Recent, Kermadec Islands), L. siligo (Recent, Western Australia), L. Stabilima gagei (Lower Miocene, New Zealand), L. (S.) ponderi (Recent, New South Wales and Southern Queensland), L. (S.) jeffreysiana iredalei (Recent Southern Queensland to Western Australia), L. (S.) j. exultans (Lower Miocene, New Zealand), L. (S.) waipipiensis (Pliocene, New Zealand), L. (S.) maxwelli (Middle Miocene, New Zealand), L. (Limatuletta) japonica colmani (Recent, Timor and Arafura Seas), L. (L.) J. spinulosa (Recent, Norfolk and Kermadec Is.), L. (L.) delli (Recent, Three Kings Is.; Pliocene, New Zealand), L. (L.) j. waitahana (Lower Eocene-Oligocene, New Zealand).

Most of the subgenera and species groups are represented by widely dispersed species in distant parts of the world or in different parts of the geological record, but some are now characteristic of the Southern Ocean or of the Indo-Pacific Realm and others seem to occupy disjunct ranges.

Some of the species groups of Limatula, despite its Mesozoic origins and conservative morphology, have apparently been widely distributed throughout the world and have speciated or sub-speciated quite late in geological time.

The dextral triforid genus *Metaxia* (Mollusca;Gastropoda) in the south-west Pacific.

B.A.Marshall.

New Zealand Journal of Zoology 1977, Vol.4, pp.111-117.

Abstract; - Species of *Metaxia* Monterosato are shown to be dextrally coiled,cerithiopsid-like members of the Triforidae, a family of normally sinistrally coiling species. *Socienna exaltata* (Powell), is referred to *Metaxia*; *M.kermadecensis* n.sp. is described from off the Kermadec Islands, and the South Australian *Seilarex attenuata* (Hedley), is shown to be closely related. On shell, opercular and radular characters, a new sub-family -*Metaxiinae* - is erected for their accomodation.

The Recent New Zealand species of Triforis (Gastropoda : Triforidae).

B.A.Marshall.

New Zealand Journal of Zoology, 1977, Vol.4, pp.101-110.

Abstract; - *Paramendax apicina* Powell and *Mendax attenuatispira* Powell, are referred to genus *Triforis* Deshayes; *T.antepalloxa*, *T.blacki* and *T.tui* are described as new; and a species close to the South Australian *Triforis epallaxa* (Verco) is recorded from New Zealand waters. *Paramendax* Powell is transferred from the Cerithiopsidae to the Triforidae as a subgenus of *Triforis*.

It is suggested that the Recent South African *Cerithiella nonnitens* Barnard, is referable to *Triforis*.

— 000 —

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POIRIERIA



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PART 5.

JULY 1978

CONCHOLOGY SECTION
AUCKLAND INSTITUTE & MUSEUM

POIRIERIA

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MAORICRYPTA YOUNGI POWELL, A NORTHERN SPECIES.

N.W.G.

Examine all the Maoricrypta you see washed up at Cape Maria or Spirits Bay, and you will almost certainly come across specimens of M.youngi Powell. As far as we know, this species is restricted to the northern tip of the North Island.

As usual with all members of this genus, the shell is of variable shape - no two the same, but compared with M. costata (Sow.), there is one feature which helps to identify it and that is the projecting 'beak' at the apex of the shell.



Specimens sometimes reach the size of 30mm, but as a rule they are under 20mm. The surface of the shell is said to be "neither smooth nor radially costate, but irregularly malleated". Sometimes, too, there are very faint markings of a few ribs, but never like those in M. costata where they are raised and extend to the margin of the shell, forming a serrated edge. The 'shelf' or septum is similar. In fresh specimens of M.youngi, the colour is buff, but most that you find will be white and aged.

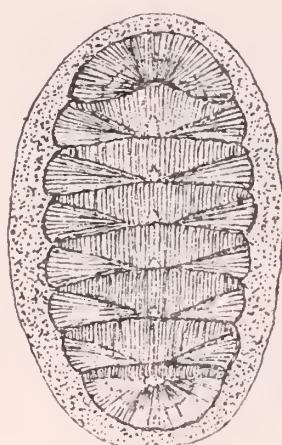
So far, we have not heard of anyone obtaining any live specimens from around this exposed northern coastline.

NOTES ON KAIKOURA CHITONS

B. Elliott

Kaikoura Peninsula is the home of numerous chitons. Largest of these is Eudoxochiton nobilis which grows to an enormous size, several specimens being almost six inches in length. In spite of its large size, it is not at all easy to find. Numerous valves wash ashore at South Bay, and quite often a complete specimen, but live ones are well hidden, presumably just below low tide, amongst masses of seaweed and sea lettuce, where they are very well concealed. My largest live one is just under $4\frac{1}{2}$ inches, and I look forward to finding one of those 6-inch beauties alive, instead of curled up on the beach.

Next in size is Guildingia obtecta, rather rare at extreme low tide on exposed rock faces. In the same habitat, Diaphoraplex biramosa is fairly common. This handsome chiton is usually very rare, but here at Kaikoura it is the most common of the larger chitons.



AMAUROCHITON GLAUCUS

KAIKOURA PENINSULA

NATURAL SIZE 5.7 X 3.5 MM



FREMBLEYA EGREGIA

SOUTH BAY, KAIKOURA

NATURAL SIZE 20 X 19 MM



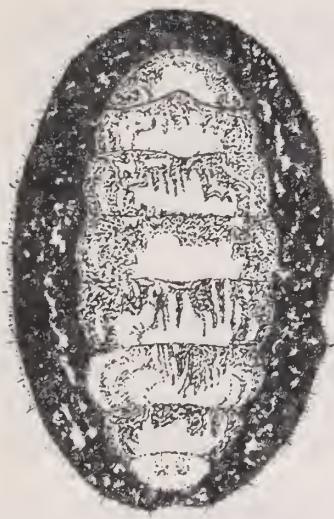
NOTOPLAX WEBSTERI

LARGE: WASHED ASHORE AT SOUTH BAY, KAIKOURA

NATURAL SIZE 2.3 MM WHEN MOUNTED

SMALL: ALIVE AT AIA POINT, KAIKOURA

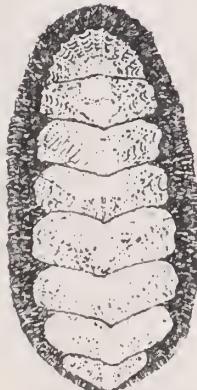
NATURAL SIZE 2.4 X 1.0 MM



DIAPHORAPLAX BIRAMOSA

ATIA POINT, KAIKOURA PENINSULA

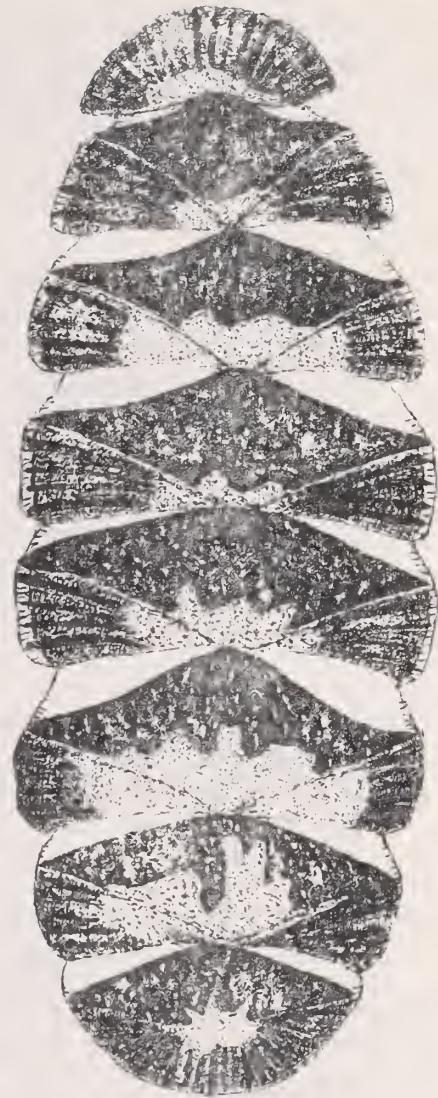
NATURAL SIZE 66 X 45 MM ...



MAORICITHON CAELATUS

SEAL ISLAND, KAIKOURA PENINSULA

NATURAL SIZE 51 X 25 MM ...



EUDOXOCHITON NOBILIS

SOUTH BAY, KAIKOURA

NATURAL SIZE: 4 SPECIMENS, FROM 140 TO 150 MM

Diaphoraplax biramosa grows to $2\frac{1}{2}$ inches. The girdle is usually dark brown, sometimes bright red, and the valves are often beautifully marked with variable patterns of bright green and dark brown. Although they are usually heavily encrusted, this can usually be scraped off with little difficulty, to show the attractive pattern underneath.

Then there are the usual common species ... fine large Amaurochiton glaucus, often reaching two inches in size; Ischnochiton maorianus, with its usual variety of colours and patterns; Anthochiton zelandicus, with its bunches of spicules; and nice clean specimens of Sypharochiton pelliserpentis and S.sinclairi.

Terenochiton inquinatus is rare here; I have found only one specimen of this usually common small chiton. Also one specimen only of Anthochiton aerous and A.stangeri, under rocks at extreme low tide. Onithochiton neglectus is moderately common in the same habitat.

Maorichiton caelatus is found at mid-tide on exposed rock faces. Though usually of small size and easily overlooked, some specimens grow up to two inches. Some of them carve out a hollow in the rock, up to half an inch deep, into which they fit very snugly.

I was very surprised to find a colony of the little Stewart Island chiton, Sypharochiton torri, living here so many miles north of its usual habitat. Plain black in colour, and reaching 15mm in size, it lives in considerable numbers at high tide on just one exposed rock at Atia Point. Another southern species which occurs here is Frembleya egregia, a most unusual, almost circular little chiton, which lives in kelp holdfasts. Last winter I found 20 of these washed ashore at South Bay, two of them still in their holdfasts, tucked away deep inside, perfectly safe until a big storm tore the whole plant away from the rock.

Cryptoconchus porosus, usually so common throughout New Zealand, is a great rarity here. It was over a year before I found my first one. There it was, four inches or more in size, safe and secure at the bottom of an 8-foot crevice which was only a few inches wide. Possibly it would have been the largest one I have ever found, but no amount of wishful thinking would enable me to reach down there and get it. Perhaps it will grow another inch, and climb a few feet higher up, and we may meet again during a future low tide!

line 11 read; Acanthochiton
- zelandicus.

The rarest chiton of all, although not much to look at, is Notoplax websteri. I have found one alive under a rock at extreme low tide at Atia Point, and one washed ashore at South Bay. This is usually a northern deep water species. N. violacea, which is common in the north, is very rare here and so far I have found only one.

* * *

TWO YEARS IN NIUE

Alan Diprose
(Junior Member)

My family and I have just come back from two years at Niue Island. Niue is the biggest coral atoll in the world and has the clearest sea water in the world. Niue lies between Tonga and Samoa.

It was about the middle of the first year when we really started shell collecting on some close beaches and reefs. Although there were hardly any beaches, here and there were pockets of sand. Occasionally we went at night down to our swimming hole in the reef and found a few shells. Sometimes on fine Saturdays we would set out in the morning for places that had lots of shells and were a long way away. Unfortunately all the best places take a long time to get to.

In the time we were there we got about 50 species of cowries and about 50 species of other shells. Some olives that I found would be longer than 2mm.

Niue is a really beautiful place; the people are all kind and everything was really terrific.

These are some cowries that we found :

| | |
|---|---|
| <i>Cypraea lynx</i> (L) | <i>Cypraea histrio</i> |
| <i>C. carneola</i> (L) | <i>C. mauritiana</i> (L) |
| <i>C. ventriculus</i> Lam. | <i>C. scurra</i> Gmelin |
| <i>C. caputserpentis</i> (L) | <i>C. testudinaria</i> (L) |
| <i>C. erosa</i> (L) | <i>C. talpa</i> (L) |
| <i>C. hirundo</i> (L) | <i>C. tigris</i> (L) |
| <i>C. ursellus</i> Gmelin | <i>C. isabella</i> (L) |
| <i>C. kieneri</i> (Schilder) | <i>C. moneta</i> (L) |
| <i>C. teres</i> (Gmelin) | <i>C. annulus</i> (L) |
| <i>C. stolidia</i> (L) | <i>C. punctata</i> (L) |
| <i>C. catholicorum</i> Schilder & Schilder | <i>C. asellus</i> (L) |
| <i>C. arabica</i> (L) | <i>C. irrorata</i> (Gray) |
| <i>C. eglantina</i> Dudos | <i>C. childreni</i> (Gray) |
| <i>C. depressa</i> Gray | <i>C. cicercula</i> |
| <i>C. maculifera</i> Schilder | <i>C. bistrinotata</i> Schilder & Schilder |

NOTE ON LIMARIA ORIENTALIS (ADAMS & REEVE 1850)

(or: Xenophora is not our only Collector-Shell)

D. Lamb

An article in POIRIERIA, Vol.6, Part 4 (August 1972) referred to Lima orientalis as a newcomer to the local scene and noted that it builds a nest of small stones and shells.

In January 1973, members of the Section had a picnic at Wenderholm with some American visitors, participants in a Pacific tour guided by Tom Rice. Whilst taking some of these folk to explore the area at the southern end of the beach, I found my first Limaria. I collected the rather interesting nest and after drying out and brushing the soft mud away, found that the nest consisted of small shells bound together with orange coloured threads; no stones were found, but the large number of *Rissoina chathamensis* shells suggest that the Limaria had no need to look for other materials. The species contained in the nest were:

| Chiton species | Single valves |
|--|---------------|
| <i>Eatoniella limbata</i> (Hutton 1883) | 7 |
| <i>E. olivacea</i> (Hutton 1882) | 3 |
| <i>E. roseola</i> (Iredale 1915) | 6 |
| <i>Estea rekohuana lactorubra</i> Ponder | 3 |
| <i>E. zosterophila</i> (Webster) 1905 | 1 |
| <i>Rissoina chathamensis</i> (Hutton 1873) | 78 |
| <i>Fictonoba rufolactea</i> (Suter 1908) | 5 |
| <i>Merelina taupoensis</i> Powell 1939 | 1 |
| <i>Seila chathamensis</i> Suter 1908 | 2 |
| <i>Sigapatella novaezelandiae</i> Lesson 1831 | 1 |
| <i>Zemitrella chaova</i> (Reeve 1859) | 4 |
| <i>Buccinulum vittatum</i> (Guoy & Gaimard 1833) | 2 |
| <i>Neoguraleus murdochii</i> (Finlay 1924) | 1 |
| <i>Turbonilla zelandica</i> (Hutton 1873) | 1 |

Oh, yes, of course - and 1 specimen of *Limaria orientalis* (Adams & Reeve 1850) !

@@@ @

LEPSIELLA SCOBINA (Q & G) - OUR OYSTER BORER

N.W. Gardner

Wherever there are beds of acorn barnacles, small blue mussels or rock oysters, our common oyster borer is almost certain to be there, and more than likely, in considerable numbers.

Though tolerant of a range of rocky conditions, be it open coast or harbour situations, it generally favours quieter waters where it can be found in great numbers between high and mid tide levels. It is a ravenous carnivore and the neatly drilled hole often seen in empty gaping oyster shells is usually the handiwork of Lepsiella. This is done by the radula. The pro-boscis, buccal mass and radula are then inserted through the hole and into the tissues of the prey.

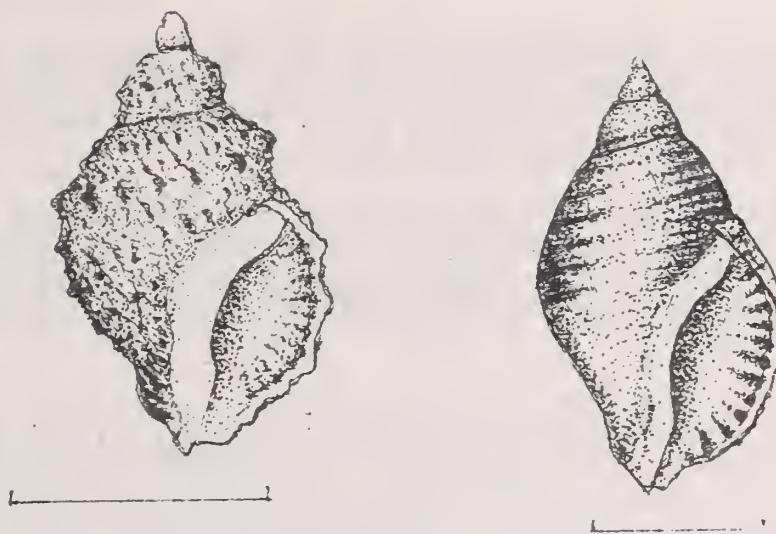
Lepsiella scobina occurs on rocky shores throughout New Zealand.

L. scobina scobina, when found in good condition - not eroded on the earlier whorls, as is so often the case - exhibits a pleasing sculpture of successive axial growth lamellae and rows of raised hollow tubercles arranged spirally. This shows to advantage in sub-adult specimens, but is almost lost by the time the mollusc is mature.

Naturally, adult shells vary a good deal in size, depending on the habitat, etc. Generally they are about 25mm in height, but in several localities, specimens of greater size are the rule - ie Whangarei Heads about 35mm, and Nerita Bay 32mm.

Overall the colour of the shell appears to be mid grey, but the 'scals' are dark brown and the aperture is almost chocolate within - though occasionally darker with the edge of the crenulated outer lip marked out in white.

The southern form, usually known as sub-species albomarginata Deshayes, is really quite different from the typical northern variety. It also is very common, especially in the South Island, but ranges well north. Good examples are obtainable at Muriwai, for instance. This is always a smaller oyster borer with the whorls more rounded and without the raised growth lamellae and tubercles. As a rule, there is a series of whitish spiral lines over the whorls - sometimes a little raised, but usually the shell feels quite smooth. The apertural colour within is darker but the white margin of the lip appears the same as in scobina scobina. The name is perhaps a little unfortunate. Examples of this form from Warrington, Otago and Dusky Sound seem to be taller and more slender, with the spirals wider and more raised.



L. scobina scobina.

L. scobina albomarginata.

An orange coloured form of scobina is also known from a number of localities. This was recorded by H. Suter (1899) as var. rutila. It does not appear to differ from the typical species in shape of shell or sculpture - only in the distinctive orange colouring so apparent within the aperture.

The occurrence of this colour form seems to be linked to the presence of light coloured rocks in the respective areas. Colonies of these molluscs occur quite plentifully at Kawau Island and are also known from Gt. Barrier Island (Port Fitzroy); Muriwai; Manukau Harbour (recent Newsletter); also Te Onepoto; near Lyttelton (Suter's original material); and Taylors Mistake, South Island.

- 00 -

A succession of Easterly gales in July has been responsible for the scouring out of scallop beds off Takapuna reef, and to the dismay of conservationists - and delight of everyone else, over 1000 live scallops at least, have been gleefully scooped up as they washed ashore.

Sea gulls have had their share too. The last time we can recall such a disturbance was February 1940, when a tropical storm caused a big washup of shells including over 200 live scallops. These were picked up in pools on the reef, and like those collected recently were all about three ins. across.

TO TAKE - OR NOT TO TAKE ?

J.R. Penniket

That, is the question - and, if one wishes to take, then how many? If the species is rare, dare I take any at all? Perhaps just one, or a pair, or three - or be greedy and take the whole jolly lot!

There is, though, no golden rule. A truly rare shell at low tide can be just the commonest, deep down where you and I cannot collect it. Maurea tigris is so seldom taken intertidally, yet scuba divers call it almost plentiful in some localities.

A common but desirable shell, easily collected, can be exterminated through overcollecting. Cellana flava, the golden limpet from the East Coast, is readily accessible, desirable for exchange, beautiful, but restricted in habitat with no reservoir of breeding shells in areas difficult to find.

Then there are species commonly taken in large quantities for food or other purposes. Some shells below breeding size cannot legally be collected, but the species are in no danger. Our Paua, Haliotis iris, may not be collected if the shell is less than 125mm (5 inches) in length. But it is not sexually mature below that size and what we are doing is removing for commercial purposes, thousands annually, of the breeding population, which should, one would think, wipe out that species in time. The Haliotis doesn't realise this, of course, and continues to populate our seas by the sheer force of egg production by those left.

Consider, too, the vast amount - hundreds of thousands - of cockles, pipis, tuatuas, and toheroas consumed each year, both now and for hundreds of years past, and they are still with us, although they receive only a moderate amount of protection - and so very often limits are not observed anyway.

Judging from the immense middens left by Maoris in ages past, tremendous quantities of many species, with shells of all sizes, from small juveniles to fully adult, were consumed for food and yet I am not aware of any species the Maori caused to become extinct.

However, it can be done! Any of us with more than a few years' experience can tell of changes to marine habitats and therefore to the animals and plants of that area, caused by pollution, shoreline modification, population pressure

and/or over-collecting. Many of these categories are out of our control and must be left to our environmental watchdogs.

We must accept responsibility, though, for some of the over-collecting that has occurred. For example, Alcithoe arabica juveniles have no free-swimming stage. They hatch from the egg and immediately commence life as a small shell. This means that heavy continued collecting from a geographically isolated locality would remove breeding adults. Without free-swimming reinforcement from outside, this would, in time, exterminate a colony from even the most suitable area. Struthiolaria papulosa, too, often has a localised habitat and I know of at least one harbour flat that was depopulated through over-collecting.

And so - what should be our measure - when do we say "take" or "do not take" or "how many"? This must be a matter for commonsense and restraint. Most importantly, know as much as possible about the shell you are about to take and decide accordingly.

Only take a live shell if you have need of it and if you are going to clean and use it. Do not collect a live specimen if an equally good dead one is available. Operculums are nice to have, but not essential to most of us. Never take a mollusc that is brooding eggs. Do not collect immature, damaged or otherwise undesirable specimens - leave them to grow and breed.

Always return rocks to their original position as carefully as possible, to avoid damaging marine life.

AN ALBINO FORM OF TANEA ZELANDICA (Q & G)

N.W. Gardner

Introduction:

The naticid sand snail Tanca zelandica (Q & G) occurs along most of our sandy ocean beaches in the North and South Islands as well as Stewart and Chatham Islands. Empty shells quite frequently wash ashore in stormy weather on open ocean beaches, but only occasionally are live specimens cast up on the beach. They are active carnivores, moving through the sandy bottom in search of bivalves.

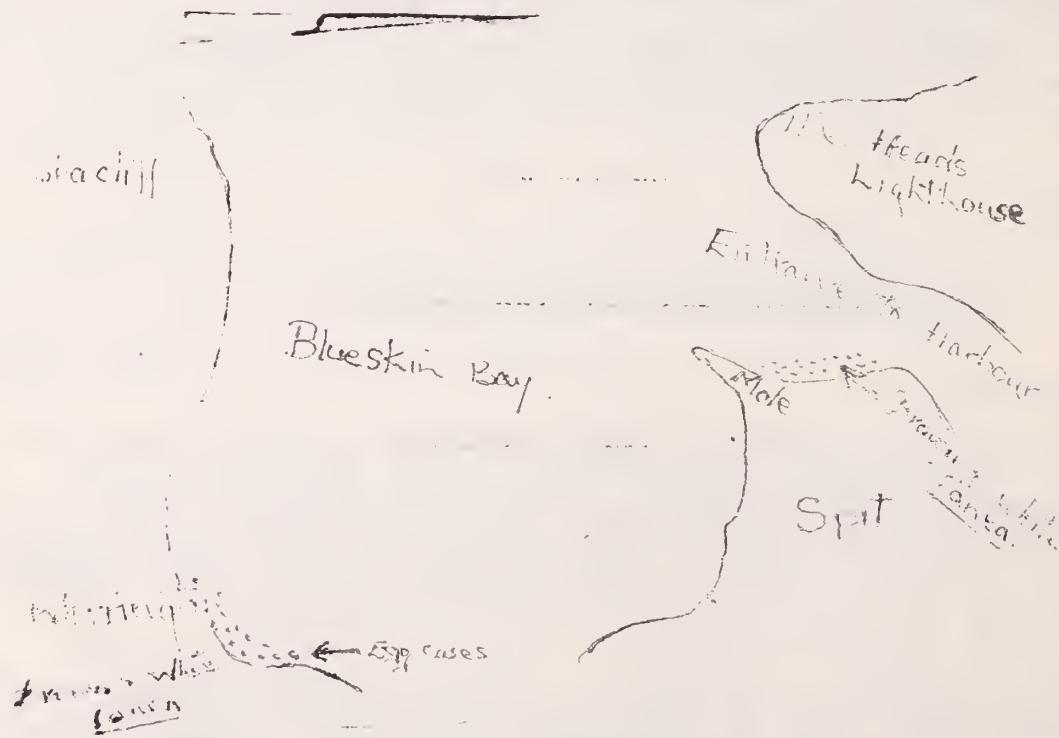
It is reasonably common just offshore in many places and the light brown shell of about 25mm in height is easily recognised by the attractive spiral rows of red-brown chevron or 'slash'

markings. The colour markings of Tanea zelandica do not seem to vary much and appear rather constant along its range.

We can now record the occurrence of a considerable number of white pattern-less shells in the "Spit" area of Otago Heads. This has been brought to our notice by our Dunedin member Mrs E. McClymont, who has furnished the following details:

"They were first noticed on 9 March 1974 - four dead specimens of whitish shells without markings. Then again on 4 March 1977 after a very big storm - fourteen live, thirty dead white specimens and fifty brown patterned ordinary Tanea were picked up. Since then, over a period of ten trips to the "Spit", about twenty live and seventy dead whitish examples along with about two hundred normal specimens of Tanea have been found.

Then, for the first time, at the end of 1977, I found both brown and white Tanea at Warrington and a lot (about 50) egg cases in a distance of 200 yards. Live and dead shells, in a ratio of four browns to one white were washed up between the rocks at very low tide. I thought they may have been brought there by the dredge dumping its load near Warrington, after dredging the channel between "The Heads" or "Spit" in Port Chalmers, as they appeared only after the new suction dredge had been working for a few months.



This year, 1978, I have been back twice in the last few weeks to Warrington and the "Spit", to try to find more Tanea. At Warrington there were only two very old dead brown shells, and no egg cases, and the rocky part of the beach is completely covered in sand. Whether or not this is due to the dredge dumping all its load in Blue Skin Bay, I can't be sure, but I have been going to that part of the Warrington Beach for the last 16 years, and I have never seen it in that condition before. It was sad to see the poor old limpets and Scutus trying to get a footing on bits of rock that were left sticking out of the sand, where there used to be deep rock pools and boulders. The "Spit" was very bare of shells - it usually is at this time of year, but I did manage to find one live brown Tanea, though not a sign of any white specimens."

Details of White Shells:

The "white" specimens equal the size of the normal patterned shells.

Of the series of "Albinos" examined (about 30 examples), about half are uniformly white, while the others have one or sometimes several continuous, but very faint, spiral bands of pale brown about the body whorl.

Where only one band is present, this is 3 - 4mm wide and is at the periphery.

If there are several bands, these more or less correspond to the spiral rows of chevron or splash markings in normal specimens.



A NOTE ON CHLAMYS

Matt O'Neill

It is generally believed by many conchologists that Chlamys dieffenbachi (Reeve) lives, as a rule, byssally attached and covered by sponge growth. You might even say that the mollusc and sponge seem to be involved in a symbiotic relationship. Sometimes the shells are found free of sponge and washed up with sponge-covered specimens after storms in the far south, eg Stewart Island. Recently I found another way in which the mollusc can live.

EXAMPLE A:

On a trip to Marlborough Sounds I have noted quantities of Chlamys dieffenbachi fragments surrounding the bases of Atrina zelandica, though only a few times before had I recovered specimens on Atrina.

During one dive I absently tore apart a large colony of the bristle worm Galeolaria hystrix and their casings in order to inspect it more closely, in the hope of finding Trichosirius. This colony was attached to an Atrina and there nestled amongst the casings, in a position where they would have been lying between the Atrina shell and the casings, were two Chlamys dieffenbachi, quite unattached, free of sponge and showing the suprasilis form. I collected six other examples in this way, none being bigger than 15mm in diameter, and all purple in colour; one or two of these were attached by a byssus.

EXAMPLE B:

This is somewhat of a physiological freak and I believe its physical form is a result of environment.

The specimen was found lying beneath a sizeable rock, but not attached to the rock, and was almost buried in the muddy substrate (extreme low tide). The mollusc was alive and completely free of sponge. To look at, the shell closely resembled a very small (20mm) Pecten novaezelandiae, bright orange in colour. The more or less concave valve, on which the rock had been resting, was covered with a regular array of very fine spines, while the convex valve, which had been resting in the substrate, displayed an array of long, well developed spines.

It would appear that while the soft substrate was conducive to the development of one valve, the restrictive pressure applied from above by the rock hindered the equal growth of the other.

However, the answer as to why certain specimens are byssally attached and others are not, and why some are sponge-covered while others are not, is one to which we can only hazard a guess.

BEACH COLLECTING AT WHANGAMATA

E.R. Sneddon

Heaven is 6.30 in the morning on a deserted shell beach, the sound of the surf mesmeric and the rim of the sun on the horizon. This is the first day of one whole week with a comfortable holiday bach at our disposal and two eager teenage boys raring to go - monetary rewards being offered. And would you believe - a wash-up at the northern end of the beach which our local shelling friends had not yet discovered! Xenophora neozelandica with Tawera spissa valves on it, Cantharidus opalus, a Janthina janthina, a small live Maurea tigris, Poirieria zelandica not quite whole, a few Chlamys gemmulata and some large lumps of the bryozoan Cellepora agglutinans. Not a lot perhaps, but a promise of things to come. Struthiolaria papulosa litter the high tide line and more are being washed up. Maurea punctulata are quite common, with the occasional live one amongst them. Xenophalium pyrum, too, are not uncommon, though not as many as we have found on other occasions here, and no live ones this time. But live Xymene ambiguus were very much in evidence. We picked up over thirty on that first morning and took them back to our makeshift aquarium at the bach, along with Thais orbita, Cominella adspersa and barnacles.

On subsequent mornings in this same area we found a small Maurea osbornei, a recognisable piece of Maurea pellucida spirata, a Xenophora neozelanica with pebbles, a Limaria orientalis valve, whole Toheroa shells (not live!), Alcithoe arabica and Alcithoe fusus haurakiensis, a big Amalda australis, a live Monoplex parthenopeus, Penion sulcatus (mandarinoides form), and the wentletrap Cirsotrema zelebori which seems to grow extra large there. Also two of the land snails, Rhytida greenwoodi, were washed up, possibly from the Wentworth Valley, which is a reserve providing beautiful walks and would, I think, be a promising place for land snailers.

A bonus came our way one morning when one of the boys went snorkelling with a speargun round the wharf piles in search of John Dory. He had no luck with the fish but brought up two very nice shells from the sand, one a big Xenophora neozelanica with the coral Flabellum rubrum on it, and the other a Penion dilatatus. Obviously they had been thrown overboard from fishermen's nets as their boats were tied up to the wharf.

Whangamata is a holiday resort with a vigorous permanent population which swells each holiday season into the numerous baches which line the whole length of the beach. Whangamata Harbour at the northern end is protected by a long bush-covered peninsula, and though drying out to sand flats at low tide, exposing big cockle beds, provides a good anchorage in its main channel for fishing and pleasure boats. A wharf at the narrow entrance is usually crowded with small boys fishing for sprats and the very large swimming crabs to be found there. The sandy surf beach stretches south in a curve to a point and then south again to the Otahu Estuary, a favourite spot for surf fishermen. On the mid-way point are three or four rocky islands, the largest, Clark Island, being connected with the point by a submerged reef, negotiable - with caution - at very low tides. Tuatuas (Paphies subtriangulata) are plentiful at low tide and pipis (Paphies australis) from Otahu Estuary.

There are three other beaches in the area within easy reach by car, and each day we made a trip to one or other of them. Onemana is the closest just north of Whangamata, where a new subdivision is being developed tucked inside the Tairua Forest. It has a steep beach of crystal white sand which flattens out at low tide. There are rather bare rocks at each end, and some mussel-covered rocks towards the northern end, where you can also find a few Diloma coracina. We have never found anything special at this beach, but there are always Chlamys zelandiae, many of them a clear yellow, some Chlamys gemmulata, Cardita aoteana valves, plenty of Haliotis virginea crispata, (Whangamata has them, too), and Brachipods. This time we got a good specimen of Haliotis australis, bigger than those previously found in this area (80mm).

Whiritoa is another holiday beach resort a little way to the south of Whangamata. It also has a steep beach of crystal white sand which flattens out at low tide, but it is twice the length of Onemana and much more promising shell-wise. There is a small estuary at the northern end and a dried-up stream and cliffs at the southern end, where there are also mussels to be had from the rocks at low tide. Struthiolaria papulosa wash up in thousands, especially at the northern end, but along the length of the beach are a wealth of small shells to be found. This time we collected Tanea zelandica, Notoacmea pileopsis, a few Emarginula striatula, Chlamys gemmulata, Zeacolpus vittatus, Trichosirius inornatus, Atalacmea fragilis, a Marginella mustellina and a worn Trivia merces. We also found lots of Amalda australis (small); Amalda depressa; Cantharidella tesselata; Xymene traversi; Marinula filholi; Neoguraleus sinclairi; Thais orbita (small, brown and frequently ribbed); and in the sand amongst the dry seaweed at high tide level, one Columbarium spiralis without its siphonal canal.

Then there is Ohui Beach. On the map it is shown as Opoutere Beach, but locally seems to be known as Ohui. It is north of Onemana and is not as readily accessible as the other beaches, being bordered by farms. A big shallow tidal basin cuts it off to the south and to the north it ends in a sizable hill edged by rocks and a stream spreading across the sand. In between are three miles of flat sandy surf beach with very few people, and shells worth looking for. It can be approached from either end. There is a rather scrubby reserve on the southern point which entails quite a walk from the rough carpark over a hump-backed footbridge through pine trees and over the sand dunes to the beach. At this end and for most of its length the tide-line shells are small and include Chlamys zelandiae (many small yellow ones), Chlamys gemmulata (also small), tiny Mesopeplum convexum with occasional big valves, Zeacolpus pagoda, Cellana stellifera and extra big Umbonium zelandica (up to 24mm across). This was the way we came, making a day trip of it and walking the full length of the beach and back again.

The northern end is a bit more easily accessible through a farmer's property, for which he asks a donation of 50 cents to be put in a box at McGregor's Gate towards the upkeep of the road. When the weather is dry, cars can drive right up to the last fence before the sand dunes, but after rain, a bog makes the last part of the road unusable and adds an extra half mile to the walk. This is the end where the best shells are. Straight out from the track is a rocky hillock, at high tide an island, but at low tide you can walk right round it, and it is then that you find the big delicately-coloured sea-anemones in the sand at the base of the rocks on the seaward side. Mussels cover the rocks reached by the tide, and tuatuas are in the sand around it. Struthiolaria papulosa wash up on the tide line between this rocky islet and the northernmost rocks. It was on this stretch of beach we found a big Maurea osbornei, a small Astrea heliotropium, several Zeacolpus vittatus, two whole Panoaea zelandica, a worn Turritriton tabulatus exaratus, and two Turbo granosus, also the extra large Umbonium zelandica which are all along this beach.

To the north where Slipper Island seems only a step away, Struthiolaria papulosa float bobbing over the rocks and are deposited in great heaps on the high tide line and in the rock hollows. Amongst them we found Alcithoe arabica, Alcithoe fusus haurokiensis, Xenophallium pyrum and nine Maurea tigris, eight with holes in them, but one perfect and with the animal still in it.

All the beaches have been very kind to us over the years and have produced:

| | |
|-----------------------------------|--|
| <i>Poirieria zelandica</i> | <i>Architectonica reevei</i> |
| <i>Mayena australasia</i> | <i>Siliquaria weldii</i> |
| <i>Xenophalium labiatum</i> | <i>Alcithoe swainsoni</i> (up to 177mm) |
| <i>Maurea pellucida pellucida</i> | <i>Austrotriton parkinsonia</i> |
| <i>Offadesma angasi</i> | <i>Zenatia acinaces</i> |
| <i>Resania lanceolata</i> | <i>Monia zelandica</i> |
| <i>Tellina huttoni valves</i> | <i>Monodilepsis monilifera</i> (small, in shell sand) |

The live shells we collected we brought back to Auckland and put in the marine aquarium. Of the 70 or 80 Xymene ambiguus we found live, we put all but 30 back and these are doing very well, as are the single Monoplex parthenopeus, a small Cookia sulcata, Thais orbita and Cominella adspersa. The barnacles lived about two weeks, and a Cirsotrema zeleborei burrowed down into the gravel and hasn't been seen since. Some live Diloma coracina were eaten by the Xymene ambiguus.

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A SUB-FOSSIL DEPOSIT OF SNAILS AT PORT JACKSON

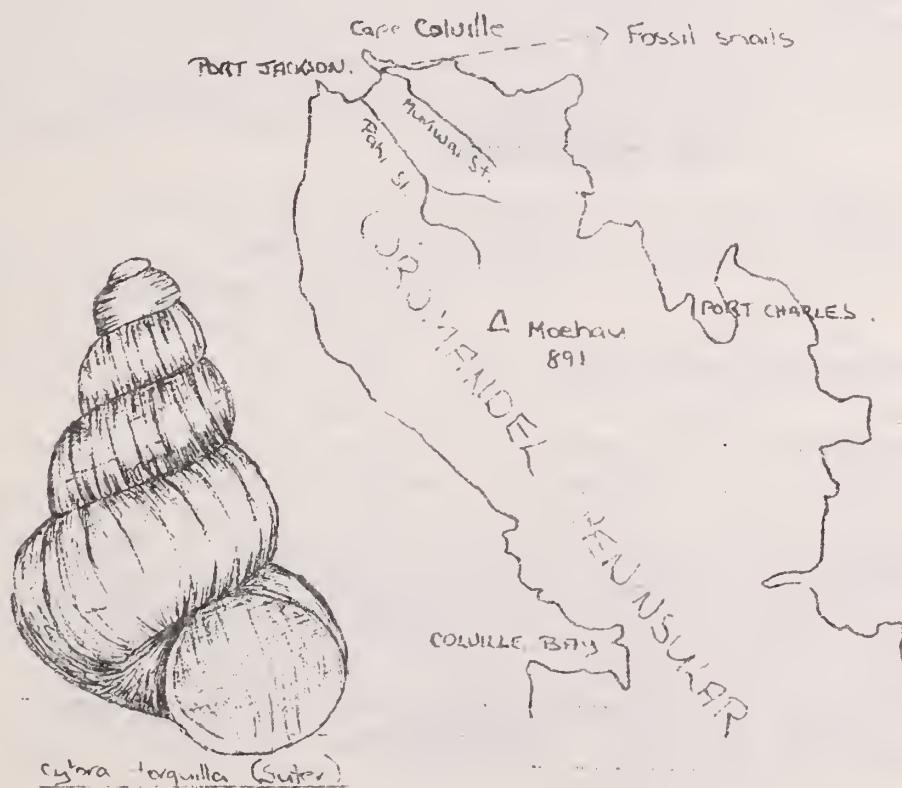
J. F. Goulstone

At the eastern end of Port Jackson, there is a limited area of sandhill. Prominent on these sandhills are Maori middens with all the remnants of past feasting. In one spot immediately behind the middens, the sand contained a considerable quantity of small snails, some still with clear colour patterns in evidence.

The wind was constantly eroding the top layer of sand, leaving only the larger species. The following is a list of species which I collected on the surface:

1 = 50 or more 2 = 10 - 50

3 = less than 10



However, I took some sand home from beneath the surface and the picture looked somewhat different. A list of species with numbers, from about three cupfuls of sand, is given. (The numbered new species are to be described by Dr F.M. Climo).

| | | | |
|--|-----|--|----|
| <i>Cyrtora torquilla</i> | 294 | <i>Paralaoma</i> n.sp.38 | 70 |
| <i>Paralaoma pumila</i> | 132 | <i>Paralaoma lateumbilicata</i> | 94 |
| <i>Charopa buccinella</i> | 70 | <i>Paralaoma</i> n.sp.29 | 35 |
| <i>Charopa</i> (Subflectola) <i>caputspinulae</i> | 75 | <i>Charopa</i> (Factola) <i>infecta</i> | 21 |
| <i>Tornatellides</i> subperforata (Suter) | 1 | <i>Tornatellinops</i> novoseel- andica (Pfr.) | 12 |
| <i>Phenacohelix giveni</i> | 2 | <i>Charopa</i> <i>parva</i> | 5 |
| <i>Therasia decidua</i> | 2 | <i>Phenacohelix</i> <i>pilula</i> | 4 |
| <i>Laoma</i> (<i>Phrixgnathus</i>) <i>lucida</i> | 3 | <i>Charopa</i> <i>coma</i> | 5 |

I think the deposit has been formed through the action of sand gradually engulfing the vegetation at the edge of the bush, though a number of other explanations are possible. A river flows into the bay at this point and could well be the collecting agent.

* * * *

NEW PUBLICATIONS

* Cerithiopsidae (Mollusca: Gastropoda) of New Zealand and a provisional classification of the family

by B. A. Marshall
National Museum of New Zealand

New Zealand Journal of Zoology, 1978, Vol 5, pp 47-120

Abstract:

Cerithiopsidae H. & A. Adams is defined; 37 New Zealand Recent species and 1 subspecies, and all genera with Recent type-species, including some with fossil representatives, are allocated to *Cerithiopsinae* H. & A. Adams, *Eumetulinae* Golikov & Starobogatov, and *Aliptinae* n. subfam. *Seilidae* Golikov & Starobogatov is reduced to tribal rank in *Cerithiopsinae*. *Cerithiellidae* Golikov & Starobogatov is maintained as a discrete family within *Cerithiopsoidea*, and *Ataxocerithium* Tate and *Seilopsis* Tomlin are referred there. *Conciliopsis* Laseron is synonymised with *Cerithiopsis* Forbes & Hanley, the genus is defined, and a lectotype is designated for the type-species *Cerithiopsis tubercularis* (Montagu). *Cinctella* Monterosato is resurrected from synonymy with *Seila* A. Adams for the Mediterranean *Seila trilineata* (Philippi). The following species are newly synonymised: *Seila dissimilis* Suter with *Specula styliformis* (Suter);

Cerithiopsis canaliculata Suter with Specula retifera (Suter); Cerithiopsis subantarctica Suter and Cerithiopsis acies Suter with Zaclys sarissa (Murdoch); Zaclys paradoxa Powell with Horologica dirempta (Odhner); Seila chathamensis Suter and Seila huttoni Suter with Seila cincta (Hutton). The following genus-group taxa are newly introduced for New Zealand species: Euseila Cotton; Aliptina n.gen; Cerithiopsidella Bartsch; Laskeya Iredale; Retilaskeya n.gen; Horologica Laseron; Synthopsis Laseron; Prolixodens n.gen. The following species are described as new: Mendax trizid- Mendax hebetatus; Mendax seilaformis; Aliptina acheronae; Cerithiopsidella blacki; Retilaskeya zelandica; Zaclys murdochii; Cerithiopsis powelli; Joculator sublima; Horologica cowei; Synthopsis regia; Synthopsis acuminata; Prolixodens benthica; Prolixodens crassa; Seila maoria; Seila dilecta; Seila elegantissima; Seila regia; Cerithiopsis infracolor. Laseron is newly recorded from New Zealand. Mendax dupli- carinata Powell and Socienna maoria Finlay are referred to Triphoridae. The 20 remaining previously described species are redescribed, and 19 are reillustrated with scanning electron micrographs. Besides Metaxia Monterosato, Seilarex Iredale, Socienna Finlay, and Paramendax Powell, which have recently been allocated to Triphoridae, the following genera are removed from Cerithiopsidae; Onchodia Dall; Tasmalira Dell; Cerithina Holzapfel; Halloysia Briart & Cornet; Trypanaxis Cossmann; and Orthochetus Cossman.

* Additions to the New Zealand Recent Molluscan Fauna with notes on Pachymelon (Palomelon)

by K.K. Dell
National Museum of New Zealand

Records National Museum of New Zealand Vol 1, No 1,
pp 161-176 April 24, 1978

Abstract:

A species of Cyrtodaria and a new species of Capulus, Halocardia and Alcithoe are recorded from New Zealand. The fossil Aneator elegans (Suter) is recorded from living material. The living species attributed to Palomelon are discussed. The type species lutea (Watson) is shown to belong to Alcithoe, and smithi Powell and grahami Powell are regarded as synonyms of wilsonae Powell.

* Classification of New Zealand Arionacea (Mollusca: Pulmonata)

A Review of the New Zealand Charopine Snails with Lamellate Apertures

by F.M. Climo

National Museum of New Zealand

Records National Museum of New Zealand Vol 1, No. 12,
pp 177-201

Abstract:

The genera Fectola Iredale, 1915, Mylesia n.gen. and Ptychodon Ancey, 1888 are used to accommodate the Charopines with lamellate apertures, previously grouped in Charopa (Ptychodon). Two subgenera are recognized in Ptychodon: Ptychodon s.str. and Solemia n.subgen. Ten new species are described, and the systematic position of Pitys cryptobidens Suter is discussed.

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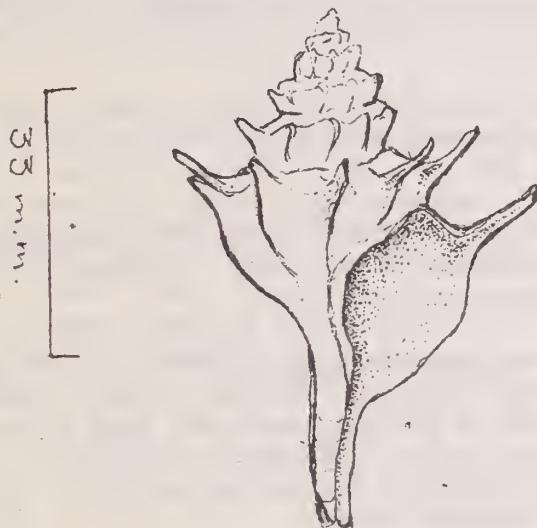
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CONCHOLOGY SECTION
AUCKLAND INSTITUTE & MUSEUM

AN ELEGANT TROPHON FROM DEEP WATER OFF LORD HOWE ISLAND



The Oceanographic Institute, from time to time carries out quite deep bottom sampling in the Tasman Sea from their Research Vessel, 'Tangaroa'. We are able to illustrate one of the very attractive species of molluscs obtained from 816 - 840 metres on a recent trip to the Lord Howe Rise. The specimen was made available by Ken Grange.

This Trophon, tentatively identified as c/f coulmanensis, is pure white, rather thin, with fairly long upturned hollow spines and with a faint spiral sculpture.

The shell bears some resemblance to several Antarctic species.

SOME LAND SNAILS FROM THE MARLBOROUGH SOUNDS.

G. FORMAN.

We camped in Resolution Bay in the Queen Charlotte Sound, arriving on the last day of 1977. Though we pitched camp in the rain, that was the last we saw of rain for the two weeks of our holiday. The party comprised Bill and Chris Winstanley with their boys from Upper Hutt, and Tim Moran and myself from Wairoa.

One of the aims of this trip was to make a visit to Blumine Island to see how Paryphanta hochstetteri bicolor Powell, was faring. Blumine Id. lies opposite Resolution Bay, and to reach it we would have to cross the main channel of the Sound by dinghy with outboard motor. As the sea often goes from flat calm to a very nasty chop in a matter of minutes, we waited for settled weather and set off one morning while the sea was a flat calm.

On approaching the island, we made for a small stony beach. A gully with some bush in it, rose from behind the beach. On entering the bush, we walked onto the site of an old bush mill. Remains of machines, an old saw blade and many old bottles littered the area which was now covered by a canopy of Kamahi (Weinmannia racemosa). The stream had two small concrete dams on it and some well preserved steps, now covered in moss, alongside the dams.

The whole place was very dry and our search began as we followed the right hand side of the gully. It soon became obvious that we had the wrong gully, with no sign of Paryphanta and only a couple of small snails to be found under a log. The bush was little more than second growth with ferns being confined to the depths of the gully. Bracken fern flourished on the hillside above.

The return journey was made down the other side of the gully, with little hope of finding anything. A few old bleached shells, mainly Charopa coma (Gray), were spotted on a narrow ledge a couple of metres above the stream. A steep slope with some fern and bush cover, was above the ledge. We were soon scratching around in leaf mould on this ledge bringing to light many shells. A few small snails were found on the slope above the ledge but the majority were on the ledge where they had probably been washed down from above over a fairly long period of time. From this area of two or three square metres nearly 1000 shells were recovered.

Charopa coma were by far the most plentiful, showing a range of spire height up to the 'globosa' form. Sixteen species of small land snails were sorted from this one spot. One remains unnamed at the moment. It is a Phenacohelix which looks like Phenacohelix ponsonbyi Suter, though more rotund,

We had missed the Paryphanta by one gully. The gully to the south of our search had been the site of the homestead of the farm which had probably followed the milling of the timber on the island. All that remains now is an orchard of cherry trees and mulberry. When we visited the island again the search for Paryphanta was forgotten for a while as cherry picking took over. That is, until a Paryphanta hochstetteri bicolor was spotted in the dry creekbed under one of the cherry trees.

The search then began in earnest, but once we began travelling up the almost dry streambed, Paryphanta were found without difficulty. Many empty shells were in the streambed, but both live and spent shells were plentiful throughout the gully. To us, the tree cover did not appear very suitable, being a sparse second growth cover, much of it Manuka. Paryphanta were all over the place, many of them on the move, and well away from any cover. Many empty shells had a hole in the shell alongside the aperture. We wondered if this was caused by Wekas, - one keeping us company throughout our visits to Blumine Island.

After collecting a few of the best spent shells, it was back to the cherry picking for a while and a damp run home in the dinghy, as the sea began coming up.

The bush behind our camp at Resolution Bay was searched fairly regularly for small snails but with only limited success in numbers, though twenty species were located. Among the most interesting finds were Rhytidia meesoni meesoni Suter, which were found by searching around the base of the crown fern, Blechnum discolor. The track between Resolution Bay and Ship Cove was also quite productive with many species being found under logs and stones alongside the track. The bush itself was very dry and likely pockets of leaf mould produced nothing of note.

The list of Land Snails recorded is as follows:-

Blumine Island :

| | | | |
|---|-------|-------------------------------------|------|
| Omphalorissa purchasi (Pfr.) | 2. | Gyhora lignaria (Pfr.) | 35. |
| Charopa bianca (Hutton) | 1. | Charopa coma (Cray) | 422. |
| Charopa (Fectola) colensoi (Suter) | 99. | Charopa (Fectola) mutabilis (Suter) | 9 |
| Charopa (Fectola) Reeftonensis | "241. | Charopa (Mocella) eta (Pfr.) | 2. |
| Therasiella neozelanica Cumber | 13. | Thalassohelix igniflua (Reeve) | 41. |
| Allodiscus wairoensis Suter | 17. | Phenacohelix lucetta (Hutton) | |
| Phenacohelix sp. | 1. | (= Stokesi) | 1. |
| Paralaoma allochroa (Suter) | 21. | Laoma (Phrixgnathus) celia (Hutton) | 72. |
| Paryphanta hochstetteri bicolor Powell. | | Paralaoma sericata (Suter) | 12. |

Resolution Bay.

| | |
|---|-----|
| <i>Omphalorissa purchasi</i> (Pfeiffer) | 2. |
| <i>Charopa bianca</i> (Hutton). | 3. |
| <i>Charopa coma</i> (Gray). | 21. |
| <i>Charopa (Fectola) colensoi</i> (Suter). | 16. |
| <i>Charopa (Fectola) mutabilis</i> (Suter). | 2. |
| <i>Charopa (Fectola) reeftonensis</i> (Suter). | 4. |
| <i>Charopa (Subfectola) rakiura</i> (Powell). | 1. |
| <i>Therasiella neozelanica</i> Cumber. | 1. |
| <i>Flammulina zebra</i> (LeGuillon). | 1. |
| <i>Thalassohelix igniflua</i> (Reeve). | 3. |
| <i>Allodiscus wairoaensis</i> Suter. | 1. |
| <i>Allodiscus planulatus</i> (Hutton). | 3. |
| <i>Phenacohelix lucetta</i> (Hutton). (=stokesi). | 1. |
| <i>Laoma marina</i> (Hutton). | 2. |
| <i>Laoma (Phrixgnathus) celia</i> (Hutton). | 2. |
| <i>Laoma (Phrixgnathus) cf liratula</i> Suter. | 1. |
| <i>Laoma (Phrixgnathus) regularis</i> (Pfeiffer). | 2. |
| <i>Paralaoma allochroa</i> (Suter). | 1. |
| <i>Rhytida meesoni meesoni</i> Suter. | 6. |
| <i>Delos jeffreysiana</i> (Pfeiffer). | 3. |

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COLLECTING IN A SOUTHERN HARBOUR.

C.BISSETT.

The Waikawa harbour area has open-sea rocky coast at Curio Bay, sandy shores at Porpoise Bay and mudflats towards the Waikawa River. There is a fishing fleet based at Waikawa itself.

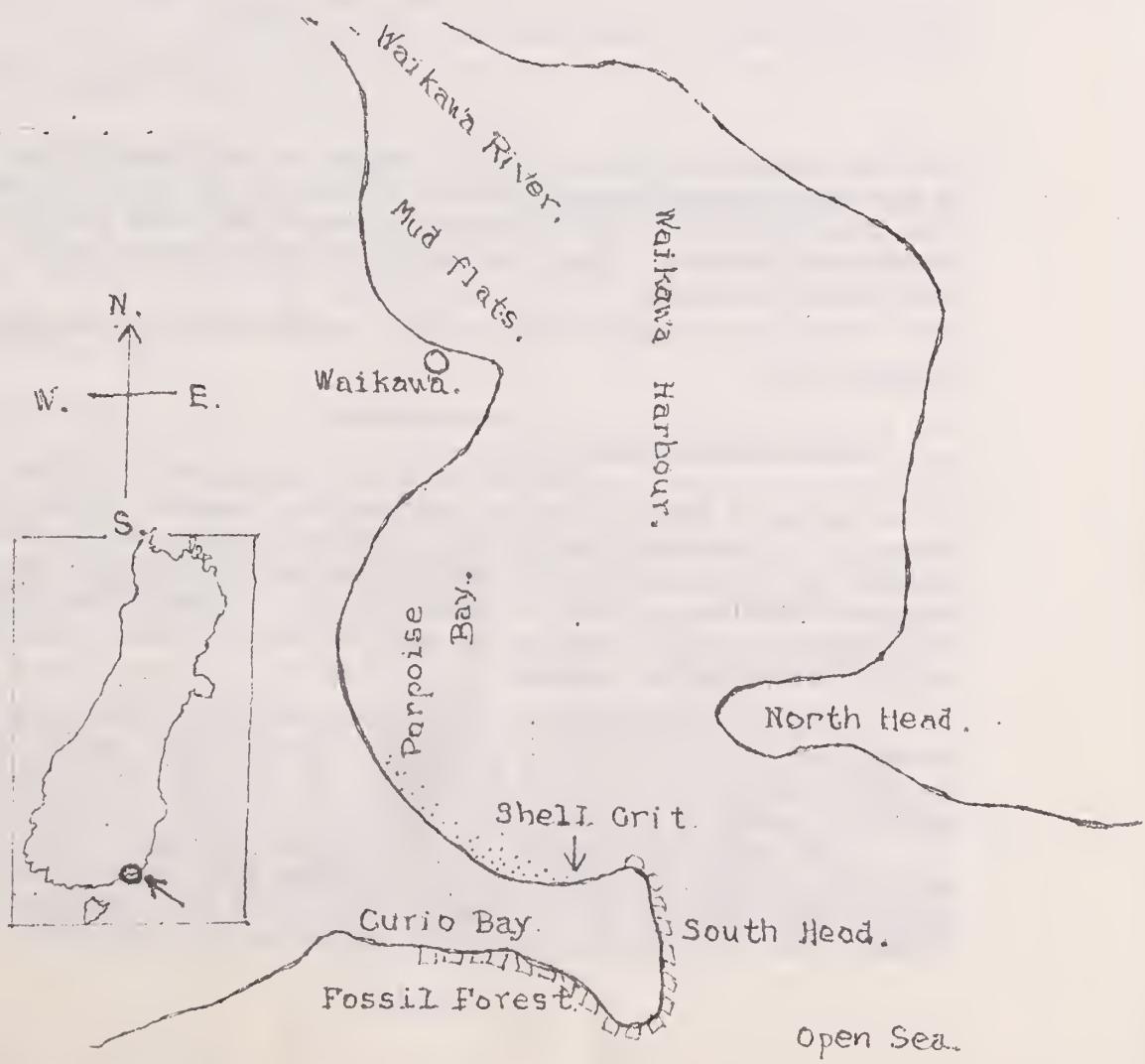
The mudflats yielded the usual Amphibola crenata, Protorthaca crassicosta, Tellina gaimardi, and Cominella glandiformis.

Curio Bay is a wild and dangerous rocky coast. The rock shore is the floor of a fossilised forest and you can see the tree stumps with their rings and also fallen logs. It is one of the few Jurassic forests in the world. Some 160 million years ago a volcano erupted and blanketed the forest with ash. There have been earth movements since, and now the sea has worn the rock back to the original base of the forest, so we now have the phenomenon of littoral animals making

themselves at home on a forest floor. Curio Bay is a wildlife protected area and the animals are flourishing. There are Cellana ornata, Cellana radians, Sypharochiton pelliserpentis, Oulactis mucosa.. Littorina (Austrolittorina) cincta, Littorina (Austrolittorina) unifasciata antipodum, Melagraphia actiops, and barnacles Eliminus modestus and E. plicatus.

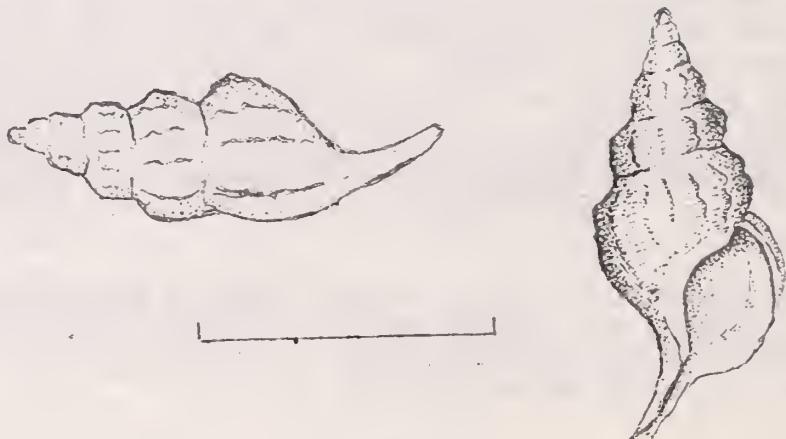
On the other side in the sheltered Porpoise Bay at the juncture of rocks and sand, there are patches of shell grit and some good shells can be found if one is patient. These include; Scutus breviculus, small Lima zelandica, brachiopods Notosaria nigricans, Terebratella (Waltonia) inconspicua, the polychaete worm, Galeolaria hystrix, along with Trochus viridus, Barbatia novazealandiae, Modiolarca impacta, an encrusting limpet, Sigapatella novaezelandiae, and Emarginula striatula.

A search over the rocks produced Haliotis iris, H. australis, H. virginea and a Cookia sulcata with very little encrustation, all thrown up by the sea which pounds against the rocks at South Head and sends spray many metres into the air.



ITEMS OF INTEREST.

Cymatona kampyla (Watson 1885).



An attractive white shell belonging to our Cymatiidae. It has the upturned siphon, typical of some of the tropical members. Alas, this species of ours is seldom seen, for it lives beyond the Continental Shelf. The illustrated specimen is from off the Otago Coast in 500 Fathoms.

It is a cold water mollusc with related species occurring further south.

Nature Note from J. Coles -

The Camargue is a large, remote delta area in the South of France, situated between two branches of the river Rhone. It has long been known to Ornithologists as it supports huge populations of birds, both resident and migratory, including the only European breeding colonies of flamingoes. Although road access has been improved and the area under cultivation increased this century, it is still a naturalist's delight.

In the book "Camargue" by Karl Weber and Lukas Hoffan, an excellent description is given of this area and there are many superb Photographs of numerous birds and animals. A glimpse of the interest this area could be to Conchologists, is given in the following extract;

"An astonishing wealth of species can be found among the snails and shells washed up on the beach. There small clams which are scraped from the sand by the locals, with tools like rakes, and provide a tasty dish, then there are the blue-black mussels, likewise a much

valued food, and various other kinds like the thick-walled Auger shells, the pelican's foot shells and the smooth, white shelled clams, Scrobicularia piperata. Like folded cut-throat razors, the long narrow razorshells, lie scattered about among hundreds of pale yellow, cross-striped cockles, and thin-shelled, fine ribbed scallops. Among the scallops, in particular, there are some very attractive specimens. This species has long been one of the best known shells of the Mediterranean in the Middle Ages, because the pilgrims brought these fan-shaped shells back with them to central and northern Europe as drinking vessels testifying to their pilgrimage to the Mediterranean, and in our own century because they have become the emblem of an international oil concern, and are, moreover, used for the serving of ragout fine.

There have been some good washups after winter storms this year and Betty Grange tells us of their finds in the Far North:-

"We left home Saturday morning 9th August and arrived at Kaimaumau Beach, north of Kaitaia, early afternoon. Along the beach many Kymene ambiguus mostly with the animal still in them, were washed up, also half a dozen Chlamys enclosed in sponge. On cleaning them I found one complete stranger for all the world like a young Australian Mimachlamys asperrimus, but it still remains a mystery. From there we went on to Pukenui Lodge Motel.

On Sunday morning as it was a very low tide, we went up to Rarawa. Walking south, we picked up Two double Mesopeplum convexum, usually only obtained by dredging, and only the second we have ever found.

Lots of Maurea selectum & Poirieria zelandica were there too - a nice start to the day. The beach was covered with seaweed and the shells were all in amongst it. Lots of broken pieces of very large Terna were also seen.

After lunch, we set off for Paxton Pt. at the northern end of the beach. Bob set off for a walk along Great Exhibition Bay which also had a lot of shell and seaweed on it. I stayed about the rocks at the end of the beach. What a time I had in the rock pools and all round the rocks, - finding live Poirieria zelandica, beautiful small, live Charonia lampas capex of a deep orange red colour, Astrea heliotropium (with hermit crab) and then in a big pool, a dozen hugo live scallops. (We had a good tea that night!). Kymene ambiguus were just everywhere - in pools, on the rocks, and they were laying their eggs all over the place. It looked quite amazing with all the shells with all those round eggs on them. We couldn't get over how many there were and all the different sizes. Bob came back with a big grin on his face, as he also had had a good time. Along the tideline were hundreds of large open scallops, and one lone Xenophallium, - a Xenophallium thomsoni in very fresh condition. Lots of Poirieria zelandica had washed up too, which was unusual, as these are, as a rule dredged in deep water. We decided to have another look in

the pools and Bob found a Bullina lineata with a hermit crab in it, and also some more scallops. One thing we noticed was the lack of very small shells which we always find there.

Walking back around the rocks we found more fresh, double Mesopeplum convexum and when we reached our favourite spot, I picked up the find of the day, (after Bob had nearly walked on it !), a small very fresh Tonna, - one we had never seen before, - most frustrating, as we had to carry it about for a week before we found out that it was a Tonna melanostoma. There were also many more Charonia lampas capex of the red colour, and dozens of small Monoplex parthenopeus in the pools, and on the rocks. I dont know whether the stormy weather had brought them in or whether they had come in for breeding. When we arrived back at the motel, we were talking to the proprietor and he asked us if we had found any scallops, as the week before, local people were taking their land rovers with trailers down to the beach and just filling the trailers with scallops which had been blown in. We were also told, that on the Thursday before we arrived, the beach was piled high with shells and that there were all sorts of goodies amongst them.

As the collecting was so good, we went back the next day but the wind had risen over night and it was also raining. Never mind, being keen shell collectors, we set off, and horrors! - the beach was clean. The tide and the wind had done their worst. We still decided to walk to Paxton Pt. and back round the rocks where we found a nice Xenophora neozelandica, more Poirieria zelandica and double Mesopeplum convexum - but that was it. The rock pools which had had so much life in them the day before, were all empty, - hopefully the Xymene, Charonias and Monoplex had returned to deeper water.

The next day the weather turned fine again, so we went up to Spirits Bay, but the wind and high tide prevented us from even getting onto the beach. In fact the waves were coming right up and over the sand hills, a pretty sight, but not for shell collectors. So, off we went to Paua. When the tide dropped, Bob went in one direction and I in the other. After awhile, the peace was shattered by much yelling and jumping up and down and waving of arms from Bob, and I thought he was just fooling, but no - he had found what he was looking for - a Conus kermadecensis, quite an old shell, with very little colour on it, but a Cone, just the same. Other than that, Paua had nothing else on the flats. The usual Mayena, Hassarius and Amalda etc. were missing. Next day we went out to the Bluff but the beach was clean except for hundreds of Dosinia anus. So we called in to Rarawa. The beach was still clean, but at Paxton Pt., the only good shell was an Architectonica rectevis - the best that we have found to date.

On the way home we decided to go the long way round and call in at Taupiri Bay. Just as well, as again luck was with us when a nice Balcis articulata washed in at Bob's feet. We also picked up two Philippia lutea, Cominella quoyana necopinata, Trivia merces and a very fresh Polinices simiae. A very enjoyable and profitable week.

Shells found on the trip include;—

| | |
|------------------------------------|--------------------------------------|
| <i>Xenophallium pyrum pyrum</i> | <i>Cantharidus opalus</i> (50mm.) |
| <i>Xenophallium thomsoni</i> | <i>Charonia lampas capax</i> |
| <i>Bulina lineata</i> | <i>Mesopeplum convexum</i> |
| <i>Xenophora neozelanica</i> | <i>Longimactra elongata</i> |
| <i>Tonna cerevisina</i> | <i>Venericardia purpurata</i> |
| <i>Tonna melanostoma</i> | <i>Xymene ambiguus</i> |
| <i>Panopea zelandica</i> | <i>Conus kermadecensis</i> |
| <i>Architectonica reevei</i> | <i>Limatula maoria</i> |
| <i>Alcithoe arabica</i> | <i>Balcis articulata</i> |
| <i>Alcithoe fusus haurokiensis</i> | <i>Trivia merces</i> |
| <i>Solemya parkinsoni</i> | <i>Polinices simiae</i> |
| <i>Astrea heliotropium</i> | <i>Philippa lutea</i> |
| <i>Monoplex parthenopus</i> | <i>Cominella quoyana necopinata</i> |
| <i>Maurea tigris tigris</i> | <i>Pecten novaezelandiae</i> |
| <i>Maurea pelucida spirata</i> | <i>Cabestana spengleri</i> |
| <i>Maurea punctulata</i> | <i>Nassarius acteanus</i> |
| <i>Maurea selecta</i> | <i>Chlamys zelandiae</i> |
| <i>Poirieria zelandica.</i> | <i>Chlamys</i> , not yet identified. |

Lilian Witterick reports that her Monoplex parthenopus (Salis) has woken up again, after sleeping?—between April and September. This is the third year this specimen has been in the tank and the third time it has behaved in this way. A diet of scallop, oyster, mussel and cockles is being much appreciated. These, the Monoplex prefers to open for itself.

Recently, Bob Penniket has come across two instances of Chlamys gemmula having been found living in enclosed spaces in wrecked ships.

The first, numbering several hundred, were discovered inside the toilet and shower block when this section was raised three years and eight months after the sinking of the Wahine at the entrance of Wellington Harbour. Though the doors and ports were closed, the spat had managed to enter and in this calm environment, had grown into very large, clean, thin shells with a range of beautiful colour patterns.

In 1977 a launch sank near Kawau Id. East Coast, and was towed into Leigh Harbour in 1978 by a fisherman who had caught it in his nets. Again, having a great liking for enclosed spaces, about eighty Chlamys gemmula had settled in the cabin of the sunken launch, and one year from the time of the sinking of the vessel, had grown to a large size. The shells were all clean and well coloured.

NOTES FROM Mr. RICHARD WILLAN'S TALK ON MITRA AND VOLUTOMITRA.

D. HOLE.

Mitra and Volutomitra belong to quite different families and have been split, on both radular and egg case differences.

Mitridae has been split into four families, the whole group having evolved from Spindle shells.

They are now listed as follows -

| | |
|-------|--------------------|
| Genus | <u>Mitra</u> |
| " | <u>Pterygia</u> |
| " | <u>Scabricola</u> |
| " | <u>Costellaria</u> |

The basic shape is a tall spired shell with plaits or folds on the columella. These plaits have two functions; first when crawling, the animal can pull back rapidly and second, it is protected by them from its enemies. There are only two Mitras which do not have folds, and only two Voluts which do not have folds. Although the Mitra is a tall shell, with a long aperture, it is also a very diverse family and can take on many shapes, for example, one resembles an Olive, Imbricaria olivaeformis (Swainson), another Imbricaria conularis Lamark, has a typical Cone shape and a narrow aperture; the plaits only, give it away. Among the New Zealand representatives we have two, which we find in shallow water; Mitra carbonaria = (Vicimitra maoria), and Austromitra rubiginosa. Waimatea = (Proximitra) obscura, does wash up on a few northern beaches.

MITRIDAE

Mitra carbonaria Swainson, = maoria Finlay.

A chestnut brown shell and white, narrow footed animal with a long proboscis. Its food is unknown but probably, it is a worm feeder. It is uncommon, but not rare and dwells just below low tide level to deeper water.

Austromitra erecta Powell.

Named from one shell only, taken at Taupo Bay, Whangaroa. (several have come to light since). Ed.

Austromitra lawsi Finlay.

The largest of all, is a whitish shouldered shell, taken in 15 fathoms, 10 miles outside Otago Heads.

Austromitra rubiginosa (Hutton), = angulata & pseudomarginata Suter, antipodum Brookes, rubiradix & planatella Finlay, and brunneacincta Powell.

Austromitra rubiginosa is an intertidal species, dark brown with an orange columella. It feeds on sea squirts on the surface of which it lays its egg capsules. The form antipodum is smooth, brown and yellow, brunneacincta is fat and white with weak bands. Type locality is 18 fathoms off Mayor Id., in the stomach of a Terikihi; plantella is taller than the others.

Austromitra zafra Powell.

A smooth rounded shell, with axial ribs crossed by spiral lines. It looks like a Columbid with plaits.

VOLUTOMITRIDAE

Volutomitra banksii (Dell).

Has a deep water distribution -01% to 10% more dwelling in more temperate waters. It has a smooth high expanded shell with three plaits. The colouring is dull with a brown chalky periosticum. An adult specimen averages 45mm., and distribution extends down through Otago, Chatham Ris., to Campbell Id.

Volutomitra problematica (Ponder)

A more shouldered shell. It was named in 1965 and is very rare. Otago.

Peculator hedleyi (Murdoch) = Egestas dissimilis Powell.

A small grey shell, 5mm. high, with white dashes and spots. Similar in shape to a Marginella. Occasional specimens found in shell sand but not uncommon in dredgings off the North East coast.

Peculator obconicus (Powell).

Taken from the far north and only in dredgings. White, sometimes with a pattern in the form of flashes. It has spiral ribs crossed by axial ribs. A deep water shell.

Microvoluta marginata (Hutton) = biconica Murdoch & Suter. = cuvierensis Finlay.

5.6mm. in height with cords in the sutures, knobs on the shoulders, folds on the columella and blotches and flames marking it. A brightly blotched little

shell found throughout New Zealand from 33fathoms to 600 fathoms.

Waimatea obscura (Hutton), = (Proximitra)- mortensenii Odhner.

A shell brightly and variously coloured chocolate to orange, the top whorls having ribs. The form mortensenii, carries ribs on all whorls. It has been taken in 13 fathoms at Whale Id. and from Trig. Id. and the Mokohinaus. It feeds on Vermetid gastropods of the genus Serpulorbis. The only one of the Volutomitrars to be found intertidally, it washes up occasionally on a few northern beaches, where the worn shell discloses a pattern of white markings. The animal is white with yellow spots.

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NOTES FROM A TALK BY MR. NORMAN GARDNER ON VOLUTIDAE.

D. HOLE.

This family occurs in most seas, being almost worldwide in distribution, with a gap in North Atlantic, the Mediterranean and the Red Sea and several pockets elsewhere. It is a beautiful family of diverse form, especially those species from tropical countries, and deservedly popular with collectors. They are very well represented in Australia.

Our New Zealand Alcithoe has a large egg and the newly hatched young are restricted to crawling on a sandy bottom (unlike the Veleger type of juvenile, which have a free swimming larval stage), and thus tend to be 'hemmed in' by areas of unsuitable bottom causing local populations to emerge with a common gene pool.

The presently accepted nomenclature unites the following; -

Alcithoe arabica (Gmelin) = depressa Suter. (a short spired, pale form found only from Spirits Bay.)

A. arabica is the nodular species found at and below low water. It is well known to most members and is found more frequently on Northern East Coast beaches. Some beautifully coloured specimens wash up after storms. Some West coast harbours such as Parematta and the Manukau have colonies living on the sand flats.

Alcithoe arabica jaculoides Powell. (= johnstoni Powell. differs in having nodules only on the last half whorl.) jaculoides differs from typical arabica in that it has a taller spire, thinner shell and no columella flange - this being absent in all deep water forms. The range is from East Cape to North Cape. Small examples wash ashore at times on Great Exhibition Bay.

Alcithoe calva Powell.

From deep water. A slender tall spired shell, usually without nodules, but a few specimens do have a weak series and these show some resemblance to jaculoides. Range, East coast of South Island, - Cape Campbell to Otago.

Alcithoe swainsoni Marwick. = elongata Swainson = motutaraensis Powell.

Is now generally looked upon as being just a smoother ocean beach form of arabica (which of course has priority) Quite smooth to distinctly nodular examples occur. The 'subspecies' motutaraensis is just a pale form of the ordinary swainsoni.

Range; South Island, and up the East Coast of the North Island at least as far as the Leigh Harbour. (P. Warren), and up to 90 mile beach on the West coast. Fine large shells occur in deeper water off Otago and Stewart Island areas.

Alcithoe ostenfeldi Iredale.

A large thin inflated form from off West Nelson and Westland occurring in about 30 - 40 fms. More slender examples of what is probably the same thing, occur off North Island West Coast, probably another deep water form of swainsoni.

Alcithoe larochiei Marwick.

Not uncommon in moderately deep water in the Cook Strait area. Like ostenfeldi, but smaller. Ranges to the top of the North Island along East Coast in very deep water. Present in Prawn trawls in 250 fathoms.

Grouped in the Subgenus Leporemax, are the small volutes.

Alcithoe (Leporemax) fusus

Occurs in a cline along the entire East Coast of both Islands. The typical species is from the South Island,

and southern part of the North Island. Has a smooth body whorl and close nodules on the spire.

subspecies haurakiensis Dell.

Similar colour pattern and size to fusus fusus, but has nodules on the body whorl. Range approximately from East Cape to the Hauraki Gulf.

subspecies hedleyi (Murdoch & Suter).

This a slender shell with long flutings on the body whorl. Quite large specimens wash ashore on Gt. Exhibition Bay, at times. Range, Bay of Plenty to North Cape.

Alcithoe (Leporemax) chathamensis Dell.

Also related to this group. It is a rare species from the Chatham Rise in very deep water. The shell is smooth, has no axial sculpture and a blotched colour pattern.

Iredalina mirabilis Finlay. = aurantia Powell, - which is a more inflated shell.

Smooth and shining. From very deep water off both North and South Islands. No columella plaits.

Dr. R. K. Dell, in a recent paper advocates doing away with the genus Pachymelon - all are to be included in with Alcithoe.

(The distinction between them is said to have been the presence of a shallow sinus and thin shell in Pachymelon.)

Pachymelon wilsonae Powell. = smithi Powell, = grahami Powell.

Typical wilsonae occurs at the Chatham Islands. It has rounded ribs over the body whorl. P. smithi comes from off the Otago Coast and has weak ribs above the periphery, and P. grahami, a dwarf form, from deep water in the same area.

Pachymelon (Palomelon) benthicola Dell, is a very rare shell from Northern parts of New Zealand - Prawn trawl material.

Pachymelon fissurata is also a very large, thin shelled variety occurring in the Bay of Plenty and also off 90 mile Beach.

Pachymelon lutea (Watson)

A very rare deep water shell. Recently a few have been taken, off the West Coast of the South Id. It looks like A. larochiei. The animal is dark in colour

almost black and is found at a greater depth than larochei.

Pachymelon flemingi Dell.

A distinctive, new species, with strong nodules and an orange mouth. It comes from away down by the sub-antarctic Islands in very deep water.

Waihaoia(Teremelon)knoxi Dell.

This little shell, 70 to 80mm. in height, is chalky white in colour with an aperture of biscuit-brown and comes from 300 fathoms, Chatham Rise - where a lot of nice things turn up.

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SHELLS FROM OREWА BEACH, NORTH AUCKLAND.

PATRICIA VAUSE.

Orewa is a long sandy surf beach, exposed to gales and usually swept clean during storms, so it is surprising to find that a large number of species do occur at regular intervals. The Southern end of the beach, from the Estuary banks to the Surf Lifesaving Club rooms, usually provides the best supply of shells. After strong Easterly winds, the high tide line is littered with the common bivalves, Paphies subtriangulata and Paphies australis, but the East Coast form of the Toheroa, Paphies ventricosa is also found. Large specimens of Dosinia amus and D. subrosea are common, and at times a number of D. lambata are found.

This beach is an excellent locality for the various Epitoniidae; Cirsostrema zelebori is often abundant and I have picked up several hundred specimens on a visit, - a few still have their operculum. Drift lines or shell sand deposits yield Epitonium minora (rarely with opercula), E. tenellum and E. jukesianum. I have also found a couple of specimens of E. bucknilli, but these are rare.

Several years ago I first noticed Crassostrea gigas appearing. These are, as a rule, specimens of 50 - 70mm. in length, attractively fluted in purple, pink and white, and generally firmly attached to long dead valves of Paphies subtriangulata. They wash up at high tide amongst the common bivalves, and can easily be recognised by their distinctive shape. Lately, while I have been cleaning some of the

beautifully ridged Thais orbita, which had washed up along the high tide mark, I have noticed a number of tiny Crassostrea gigas settled into the grooves of the Thais shells. Cardita cinea, are also living on the thick deposits of old Paphies subtriangulatum in the Orewa Estuary.

Other bivalves washed up along the beach include Mactra discors, Chione stutchburyi, Anomia trigonepsis, Bassina yatei (with ridges invariably ground down by the surf), Gari lineolata, Soletellina nitida, Tellina gaimardi, Tellina liliana (occasionally a pretty orange shell), Perna canaliculus, Modiolus neozelandicus, small Atrina zelandica, and occasional specimens of the following - Divaricella huttoniana, Pecten novaezealandiae, Notopaphia elegans, Myadora striata, Limaria orientalis, Zenatia acinaces, and Venerupis largillierti.

The north end of the beach sometimes yields freshly smashed valves and pieces of Offadesma angasi, - obviously found by the gulls first. I did hear of one lady who collected a small boxfull of intact Offadesma a few years ago, during a gale.

Kelp holdfasts are washed up now and again, and are well worth examining. A nice surprise one day, was a large live, pale orange Chlamys zelandiae attached by byssus underneath one Kelp holdfast. Sometimes a complete Cleidothaerus albida is attached, or Hiatella arctica, Ostrea lutaria and Anchomasa similis (usually single valves) and small Pholadidea spathulata. Vermicularia zelandicus are commonly found in this habitat. It was interesting to note that several Zelithophaga truncata had bored right through one rather solid Cleidothaerus albida and were seen firmly embedded inside its shell, when the upper valve was prised off.

The pools that form from scouring action along the sides of the rocky breakwater at the Estuary mouth, sometimes harbour living Struthiolaria papulosa and abundant large Cominella adspersa. Both species are also found washed up alive along high tide mark. The living Struthiolaria papulosa are often rather surf worn when fully adult, but the younger adults and juveniles have the attractive characteristic patterns. The few living Struthiolaria vermis found beached, are, as a rule, small dark coloured specimens, some with the white peristome, others yellow coloured. The beautiful, clean Cominella adspersa are the best specimens I have encountered anywhere, well speckled, bright orange aperture and often with a perfect spire. Cominella maculosa and Cominella glandiformis are seldom washed in, but the latter are common in the shallows of the estuary, though poor specimens, as they are very eroded in their muddy surroundings. A number of Dilema subrostrata - all patterns and colours - graze on the algae covered heaps of dead bivalves in the estuary shallows.

The rock breakwater also harbours large numbers of the red sea anemone, Isactinia tenebrosa, growing under the shady sides, and on a couple of occasions, I have found the wandering sea anemone, Phlyctenactis tuberculosa, stranded in the pools. Of special interest is a very

large, unusual starfish, Luidia varia, which also strands in these pools. and along the estuary banks. Unfortunately its long snakelike arms are very fragile, and most specimens are already severely disfigured when found. The few perfect specimens I have carefully lifted up, drop their arms with disappointing rapidity.

Other gastropods picked up along the beach include, Umbonium zelandicum, Bulla quoyi, Trochus viridus, Turbo smaragdus, Cookia sulcata, medium sized, living Penion sulcatus, Amalda australis, Nerita melanotragus, Amphibola crenata, Melagraphe aethiops, Maoricolpus roseus, Zeacolpus pagoda, and an occasional very worn or broken Aleithoe arabica. Many Arachnoides zelandiae and Echinocardium australe are buried in low tidal shallows and wash up during storms. The common swimming crab, Ovalipes punctatus, falls common prey to gulls after storms, as numbers of the crabs strand on a low sand-bar to the left of the Estuary mouth and the gulls wait there to forage. In recent months a cheerful band of Oystercatchers, have taken up residence on this area, and can be heard piping their warning as anyone approaches. In early June I was pleased to see that their numbers had increased to about a dozen, -several black oystercatchers, and the remainder with the usual pied markings. They make a welcome addition to the shags and ducks living the Estuary.

I have found a few tiny Janthina janthina, after Easterly gales and some Spirula spirula, one of which had a piece of its animal still firmly attached. Velella velella and Physalis physalis, the Portuguese -man -of -war, and Lepas anatifera, the goose barnacle, also strand at high tide, accompanied by Aurelia labiata the common jellyfish.

Molluses of brackish water areas also appear along high tide mark and in drift lines -Melanopsis trifasciata, Ophicardelus costellaris, Marinula filholi, Potamopyrgus antipodum and Amphibola crenata. It is not unusual to find beached, the land snail Helix aspersa and the ubiquitous Oxychilus cellarius.

The appearance of shell sand or suitable shelly deposits is rather sporadic, but can be well worth gathering and sorting through. In May of 1977, and these yielded 53 specimens of Pupa kirkii, a surprising find. Most were beach worn, but a few were in excellent condition. Other shells were; -Cominella quoyana, Trochus tiratus, Antisolarium egenum, Daphnella eanellata, Amalda mueronata, A. depressa, A. novaezelandiae, Xymene plebojus, Paratrophon quoyi, Taron dubius, Micrelenchus tenebrosus, M. dilatatus, M. sanguineus, Cantharidus purpuratus, Philine auriformis, Pyxipoma weldii, Limaria orientalis, Phenatoma zelandica, Duplicaria tristis, Haminoea zelandica, Rissoides chathamensis, R. anguina, Chemnitzia zelandica, Fossarina rimata, Tanea zelandica (one tiny shell), Neoguraleus sinclairi, N. interruptus, N. tenebrosus, N. anomus, Antimelatoma buchanani, maorum, Nucula hartvigiana, Herpetopoma bella, Thoristella cypressa, Maoritomella albula, Buccinulum lineum, B. vittatum, Zeacumantus subcarinatus,

Austromitra rubiginosa, Risellepsis varia, Notosinister infelix,
Zaclys sarissa, Zemitralla chaova, Paxula paxillus, Eatonicella limbata
E.olivacea, Merelina taupoensis, Fictomoba rufolactea, Littorina unifasciata
antipodum, Siphonaria zelandica, Sigapatella novaezelandiae, Maoricrypta
monoxyla, M.costata, Zegalcus tenuis, Notoacmea holmsi and Trichosirius
inornatus.

On June 20th after strong gales, I was astounded to find the entire length of the beach strewn with many thousands of live Atrina zelandica, all about 150mm. in length. The southern end of the beach was especially thickly deposited with great masses of the shells and the gulls and oystercatchers were quickly breaking them open and gorging themselves on the mass of food. I counted 30 oystercatchers this time so the numbers are still increasing.

The sandy pools around the rocky breakwater were piled with masses of Atrina, many struggling to attach their byssus, but without success. Among the Atrina, were about 300 Offadesma angasi, ranging from 30mm. to large 100mm. specimens. Most were freshly broken open by foraging birds, but I collected a good number of perfect specimens, mostly by going quickly along the high tide mark and picking them up before the birds could ruin them. Over 100 live Struthiolaria papulosa were seen, many adults as well as juveniles and 8 S.vermis that were very tiny adults, richly coloured and with animals in them. They were so small that they looked like a dwarf form, as all had a well developed peristome. There were three large live Penion sulcata along high tide mark, all different colours one being very pale, one the usual greyish colour and the other a rich reddish brown. These were a welcome find as was the one live Dosinia greyi - my first ever! Many Tellina liliiana and T.gaimardi all of large size, were strewn among the Atrinas, with one lone T.edgeri, and one complete specimen of the Starfish, Luidia varia. This was a fairly small dead specimen, partly dried, so I was able to get it home safely and into formalin, intact.

At the far end of the beach, to the North, were hundreds of large live specimens of gaily patterned Tawera spissa, all on the sand at high tide. I have never seen them washed up in that area before. I took a bucket of Atrina zelandica home, and late that evening, when I was cleaning them, I noticed that each one still contained its commensal crab, Pinnotheres novaezelandiae. These had clung tightly to their home, even in these shells choked with sand, or with the animal obviously dead. Even a long soaking in fresh water did not dislodge them. How difficult to clean, are Offadesma! It is impossible to open the valves wide enough to clean out all the flesh, no wonder the birds prefer the simple puncture through the side resulting in the loss of so many lovely specimens.

A week later there was scarcely a trace of that incredible washup. An elderly gentleman who has lived at Orewa for many years, told me he had never seen anything like it in all the years he had walked the beach.

NEW PUBLICATIONS

The Powelliphanta gilliesi = traversi - hochstetteri - rossiana
- lignaria - superba ring species (Mollusca: Pulmonata).

by F.M.Climo

National Museum of New Zealand.

New Zealand Journal of Zoology, 1978, Vol.5, pp.289 - 294.

Abstract:

An alternative classification of the New Zealand rhytidid genus Powelliphanta O'Connor, 1945, is presented. P.Gilliesi (Smith, 1880) and P.hochstetteri (Pfeiffer, 1862), are recognised as species, and the following subspecies are recognised within hochstetteri; h.superba (Powell, 1930); h.lignaria (Hutton, 1880); h.rossiana (Powell 1930); h.fiordlandica (Climo, 1971). A model is explained which suggests that all described species and subspecies of Powelliphanta are part of a complex ring species. This developed as a result of glacial disjunction of South Island populations and hybridisation across a Cook Strait land bridge formed during the last Pleistocene glaciation,

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OBITUARY

Dr. John Marwick, who died after a brief illness, on August 16th., in his 88th. year, is considered to be New Zealand's greatest Palaeontologist. He spent over 30 years as Palaeontologist to the Geological Survey, and wrote extensively on the Tertiary and Recent mollusca of New Zealand.

Students of fossil Conchology, are all familiar with his paper on Turritellidae and 'Marwick's Illustrations of New Zealand Shells, with a Checklist of New Zealand Cenozoic Mollusca' by C.A. Fleming.

Dr. Marwick was held in very high esteem, not only for his work, but as a person, and will be remembered with affection by all who knew him.

- 000 -

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A. M. N. H.

CONCHOLOGY SECTION
AUCKLAND INSTITUTE & MUSEUM

GOMPHINA MAORUM (Smith)

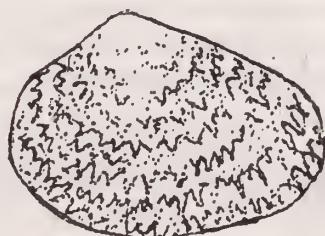
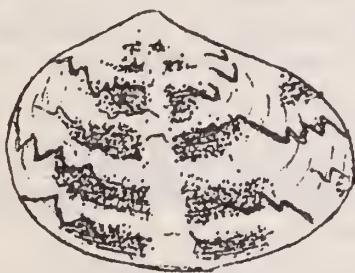
N.W.G.

This is one of our more colourful small venerids - one of the few that sport an attractive colour pattern.

The ~~genus~~ occurs over the western Pacific - from Australasia to Japan. Our single species Gomphina maorum Smith, is found only in the north of New Zealand and even then seems to be rather restricted; most check-lists cite it as being rare and located only at Cape Maria van Diemen.

Strangely enough, it must be a fairly common bivalve in this area, for the sandy beach between Te Werahi and Cape Maria Headland, is frequently littered with single valves along the high tide line. Most of these are whitish, without colour markings - bleached, no doubt but still pink near the hinge.

If one was able to dredge just offshore from here, live shells would certainly be obtained. After a spell of rough weather, a few live specimens sometimes find their way onto the beach. These occur in two main colour patterns; the dominant one is of irregular, brownish, zigzag lines, well spaced across the shell, with the addition of two more solid bands radiating out from the hinge. Sometimes these bands are not very wide but on other shells they occupy much of the surface of each valve. Occasionally, a pattern of



close zigzag lines, without the radiating bands, occurs. Specimens of up to 20 mm. are not unusual.

Although listed as living only at Cape Maria van Diemen, it is also known from several other localities, though rarely so. Years ago, a fresh whole specimen was washed ashore at Long Beach, Russell, Bay of Islands. Strangely, in spite of considerable dredging having been done in recent times, I know of

no further records from this area. More recently a few complete shells have been coming ashore at Bland Bay and Taupiri Bay, -nicely patterned examples. The known range of this interesting small venerid, is therefore extended. Any additional records would be of interest.

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IT COULD HAVE BEEN THE SAME HERE !

N.W.G.

To the New Zealand Naturalist, the Three Kings Islands off the northern tip of the country are of special interest, for, although they are only about 30 miles from the shore, a distinctive endemic flora and fauna has evolved there. To the Malacologist, they are of considerable interest as they support a land snail fauna that is unique and thriving.

This was not always so. A mere 23 years ago Great King Island was badly infested with goats - with dire effects to wild life. There was no regeneration of vegetation, remaining scrub and bush was open and park like, and dryness was increasing everywhere; all this because of the liberation of goats last century, to provide a source of food for possible shipwrecked mariners. The commendable decision to exterminate these animals in 1946, resulted in much wild life being given a reprieve - for many species, just in time. The regeneration which has resulted, makes this a real success story. The growth of plants in a short time was phenomenal and vegetation is now dense. Consequently, the large Placostylus snails have increased from the few dozen remaining, to hundreds.

Islands elsewhere, however, have not fared so well, and one that comes to mind is St. Helena, in the South Atlantic, which has had a long and luckless battle with goats.

The subject is one which has been discussed by T.C.Crowley in his presidential address (J.Conch.29 233-237.1978), and the following revelent information is gleaned from this source. Due acknowledgement is made.

The island of St. Helena was densely covered with luxuriant forests of indigenous vegetation when discovered by the Portuguese in 1501. This cover of course, prevented erosion and protected the fauna, but with the subsequent liberation of goats in 1513, the stable ecology was inevitably doomed.

In 1651 the East India Company took possession of the island and it was nearly 50 years later before there appeared to be any concern about the rapidly

diminishing forests. Up to this time, the bark of the indigenous redwood and ebony, was stripped from the trees and used for tanning. The trees were left to die where they stood. The Governor of the day seemed to realize all was not well and recommended to the Company that the vast herds of goats should be destroyed, as they prevented the regeneration of the forest. The reply he received instructed him to encourage the goats as they were more valuable than trees, - and so passed St. Helena's last chance ! We are told that by 1810, the forests were all gone (fuel was then being imported) and that introduced plants were running wild. Amongst these, the New Zealand flax apparently now covers much of the island "in a dreary blanket",

The result of all this on the land snail fauna, for instance, has been very grim. Originally, the island had a varied selection of endemic species. The destruction of their natural habitat, however, eliminated practically all of them; the only species which seems to be holding its own now is a species of Succinea which has been able to adapt to an ecological niche of its own.

With the increase of grassland and open meadow, it was inevitable that European species would appear and many of these have thrived. Amongst these are, of course, some old 'friends' - Helix adspersa and Oxychilus allarius.

How easy it would have been for such a fate to befall our own Great King Island, if action had not been taken .

- 800 -

WINTER STORMS AT KAIKOURA

B. Elliott

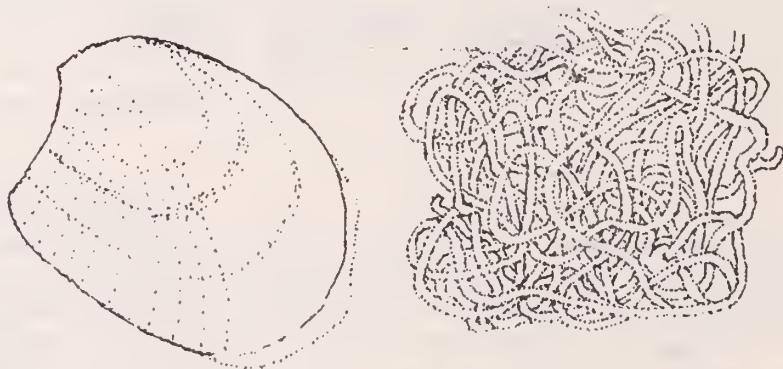
Kaikoura seems to be well known for its freezing temperatures, frequent gales and violent storms. Nothing is heard about the many fine warm days, when the sun sparkles on a calm azure sea and fluffy white clouds drift across the blue sky, high above the snow-covered 8000ft. peaks of the Seaward Kaikoura Range. This scene of breathtaking beauty has no news value, it seems - but, let there be another storm threatening, and Kaikoura is headline news again with another blot on its reputation.

Those who build their houses too close to the beach, surely have no pleasure when enormous waves inundate their homes, and those whose gardens are their pride and joy are far from happy when their favourite shrubs and flowers are battered by a howling gale. Those who were responsible for making Kaikoura's foreshore so attractive, must have been dismayed when heavy seas, in a few short hours, swept through the Memorial gardens and the playground, and right across the road, sweeping away hedges, killing trees,

causing massive erosion and leaving a trail of debris behind.

But the shell collector, listening to the shrieking wind and observing the crashing waves, can't help feeling a thrill of eager anticipation - " I wonder what will be washed ashore this time?"

June and July seem to be the best months for beachcombing at Kaikoura. By August, the weather has settled down and fewer shells are washing ashore. On June 13th, a South West Storm hit South Bay, washing a 20 foot Basking shark up onto the beach. This was one "treasure of the deep" that did not end up in my collection. Even the local seagulls did not seem very interested in such an enormous meal. Shelling during the next few days was not as exciting as I had hoped; nothing new, but nice specimens of Lunella smaragda, Haliciotis australis, Sigapatella novaezelandiae, Maoricolpus roseus and Zeacopagia disculus with an occasional Modelia granosa, Argobuccinum tumidum Penion mandarina, Dosinia zelandica, Haliciotis virginea, Eudoxochiton nobilis and Frembleya egregia. Big clumps of the stalked barbacle, Mitella sertus were cast ashore along with large quantities of seaweed. At East Head too there were great piles of seaweed but not many shells; A nice large Cookia sulcata, a squid beak (probably Notodarus sloanii) and an Aplysia brunnea were among my finds, and also several clumps of Aplysia eggs were washed up. Not long before, on May 22nd., I had seen five of these big dark brown Sea Hares with their egg masses in a low tidal channel at East Head. The eggs are golden yellow in colour, long strings of jelly-like substance in tangled clumps. I hope that some of them survived the storm !

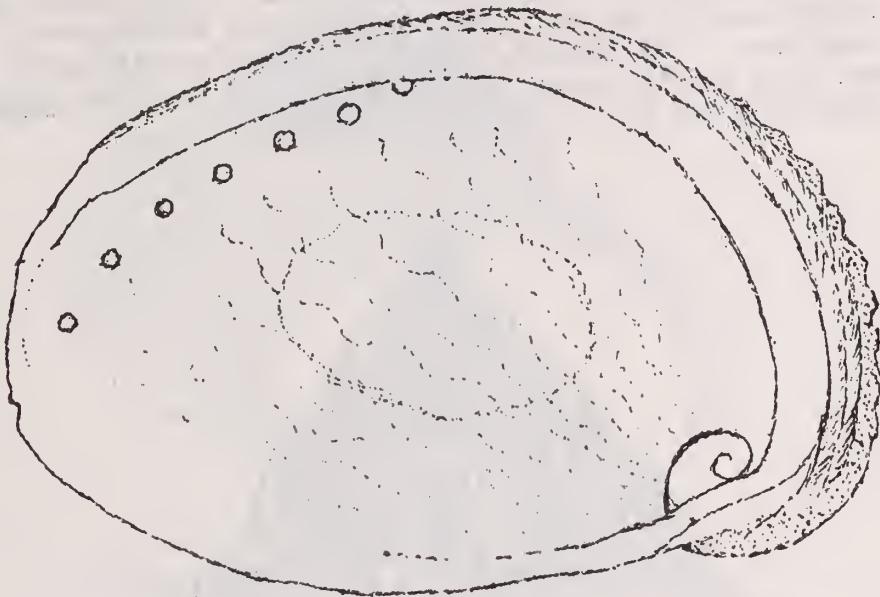


APLYSIA BRUNNEA SHELL AND EGGS

EAST HEAD, KAIKOURA PENINSULA

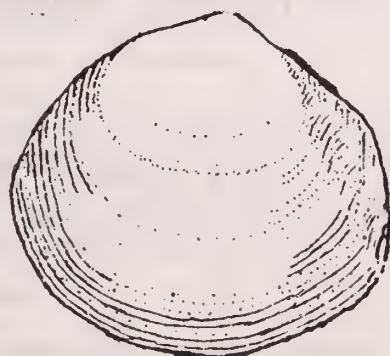
MAY - JUNE '78 NATURAL SIZE

Haliotis australis washes ashore frequently on Kaikoura beaches, and grows to 116mm. in length. The illustrated specimen is an 'old timer' but I have good ones of 105, 107, 108, and 110mm.



HALIOTIS AUSTRALIS SOUTH BAY, KAIKOURA
JUNE '78 NATURAL SIZE 116 X 80MM.

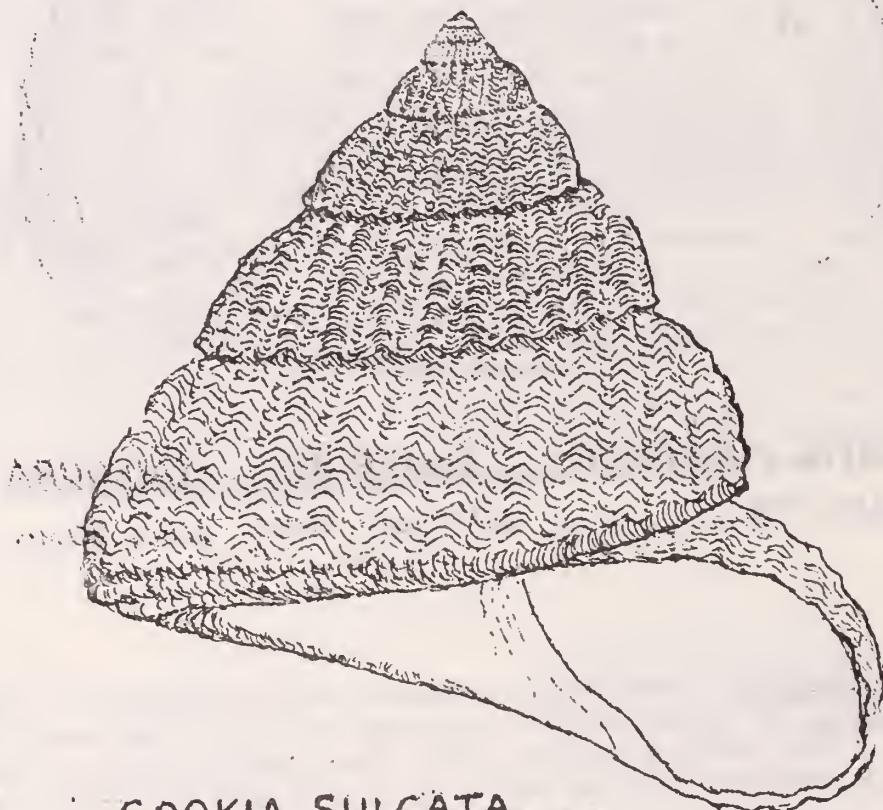
Haliotis virginea is much less common and smaller, growing to 64mm. Zeacopagia disculus is another shell that grows to larger than usual size at Kaikoura. I have several of these over 45mm., bright golden yellow in colour, while one specimen found at South Bay this winter is 51mm. in length.



ZEACOPAGIA DISCUS
SOUTH BAY, KAIKOURA

JULY '78 NATURAL SIZE 51MM.

The Turbinidae are well represented here. Many dozens of Lunella smaragda met a violent end in this winter's storms, nice clean specimens from 55 to 60mm., with one or two reaching 70mm. Many large Cookia sulcata washed ashore too, but these were all dead shells, mostly too old to be of any use. My largest, 112mm., is in poor condition, but the next in size, 105mm., is a beauty, though it is a dead shell. Live Cookia are very hard to find here but must be plentiful offshore.

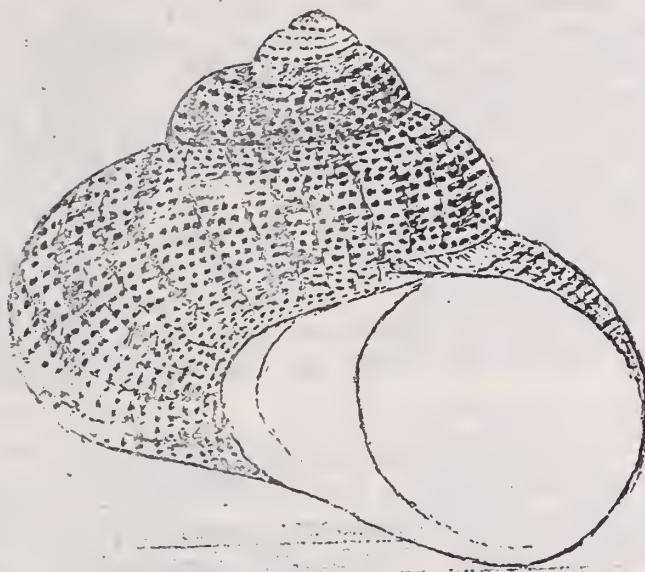


COOKIA SULCATA

SOUTH BAY, KAIKOURA. NATURAL SIZE 105mm.

I have found a dozen Modelia granosa washed ashore after this winter's storms, most of them in excellent condition, but none alive. The largest is 83mm. with several others almost as large, and five smaller specimens - really beautiful - in the 60-65mm. range.

It was on June 24th. that heavy seas from the north caused such havoc along the Kaikoura foreshore. The gale-force winds which were supposedly battering Kaikoura, were a figment of somebody's imagination, as it was almost calm here, but there must have been strong winds somewhere to whip up such heavy seas, which, aided by spring tides, flooding and low pressure, swept right across the road in many places.



MODELIA GRANOSA

SOUTH BAY, KAIKOURA

NATURAL SIZE 83MM

A few shells were washed up - plenty of Modiolus areolatus, several Angulus spenceri (the only time I have collected these at Kaikoura), a few Notirus reflexus, another big Eudoxochiton nobilis and the only Notoplax violacea that I have seen in this area. Mactra murchisoni is rare here; Kaikoura's shingle beaches are not to its liking, it seems. But there is one corner where a single valve sometimes washes ashore, and on this occasion seventeen live ones washed up, providing a tasty meal as well as good specimens for my Kaikoura collection. In the same spot, Scutus breviculus wash ashore after storms. Chlamys zelandiae is another rarity here, although the many low tidal rocks would appear to provide a perfect habitat for it, so I was pleased to find a big double red and single yellow one washed up. So much for the "Spring" tides! While the high tides certainly "sprung" higher than usual, the low tides receded just enough to make it safe to beachcomb along the high tide line!

On July 4th. a howling easterly gale hit Kaikoura. One of the fishing boats broke her moorings and was being swept quickly

towards the rocky beach. From our home on top of the Kaikoura Pen. we witnessed a spectacular rescue as another boat manouvered alongside, and a man lept across the gap. Then both boats headed out to sea, and had to go right round the peninsula to South Bay to find shelter. The storm washed up a lot of seaweed, but almost no shells. The high tide line at Lyell Creek was strewn with smashed Swimming Crabs, Ovalipes punctatus, legs, nippers and several carapaces around 4 inches across. More strong winds followed on July 7th. & 8th, and then on the 11th. yet another northerly gale. In the hope of finding a big Swimming Crab before the sea battered it to pieces, I went along to Lyell Creek in the midst of the gale, but there was nothing worthwhile to be found. The wind was blowing so hard, that I thought I might have to get down and crawl, and I was thankful when I was safely back in my car. Later that afternoon and evening the wind increased in velocity to 93m.p.h. A fishing boat was blown ashore, one of the hotels lost its roof and Kaikoura received a considerable battering.

Our garden along with many others was the worse for wear when the storm abated.

There were a few shells washed up at Lyell Creek. The usual Modiolus arealatus was there; some a deep, uniform purple inside; Protothaca crassicosta up to 50mm. in length, Aulacomya maoriana, some having grown to more than 3½ inches, Zearcopagia disculus, two Cantharidus opalus, an occasional Cardita aoteana, a Brooch Star Asterodon dilatatus. I carried back to the car a big rock containing Zelithophaga truncata, and when I had hammered it to pieces, I extracted two dozen fine Date Mussels, many of them alive. I have not found these in low tidal rocks at Kaikoura but only washed up after storms. Dozens of Astrofusus glans were washed up, still alive but badly smashed. Like the Mactras, they dislike Kaikoura's shingle beaches and are seldom seen here, but appear to exist in considerable numbers in deeper water.

On July 14th. I searched among the debris at Kaikoura wharf and found two dozen Alcithoe calva, one still containing the animal, and all of them smashed! - it was enough to make a shell collector sit down and weep. Such fragile shells would have little chance of washing up on that rocky shore without being badly damaged. Half a dozen Penion ormesi were in the same condition, but one nice little Maurea pellucida arrived safely at the high tide line.

There was more strong wind on the 19th. & 20th. This brought us around to the Spring tides again, but once more adverse weather and a low barometer meant that high tide was of more interest than low. Near the Marine Laboratory, where the high tide line was right up on the road, I picked up some Argobuccinums, several large Zeacopagia and a 81mm. Modelia granosa. Next day I returned to the same spot to see if the previous night's high tide had washed anything else of interest ashore. I was talking to a man gathering wood nearby, and lamenting over a smashed Fusitriton retiolum, when he said "I've got one of those at home you can have". He crossed the road to his house and returned with an Alcithoe calva in better condition than any I had found, and a barnacle-covered Penion ormesi, perhaps of more interest for the barnacles than the shell; however, they were nice additions to my collection. And now it is August, and Spring is here. Calm weather is pleasant, but few shells are washing ashore. Still, I can't have it both ways!

NOTES OF INTEREST

Norm. Douglas reports that Harry has returned from about three weeks on the Chatham Islands and has given him some shells and beach grit. So far the following have been sorted out;

| | |
|--|--|
| <i>Halictis australis</i> Gmelin | <i>Rissoina chathamensis</i> Hutton, (colour markings). |
| <i>Halictis virginea morioria</i> Powell | <i>Radiacoma</i> sp. (pink rays inside. |
| <i>Halictis iris</i> Gmelin | Some whitish inside with brown spot.) |
| <i>Cellana strigilis chathamensis</i> (used as fish bait when working on S.E. Island) | <i>Tugali suteri</i> (Thiele) |
| <i>Herpetopoma bella</i> (Hutton) | <i>Microleechus dilatatus</i> (Sowerby) |
| <i>Cantharidus opalus canaliculatus</i> Powell | <i>Melagraphia aethiops</i> (Gmelin) |
| <i>Turbo granosus</i> Martyn | <i>Crosseola</i> (Dolicrosea) <i>vesca</i> Finlay |
| <i>Cockia sulcata</i> (Gmelin) | <i>Hauratia hamiltoni</i> Suter |
| <i>Trochus viridis</i> (Gmelin) | <i>Liratilia</i> sp. (<i>conquisita</i> chathamensis?) |
| <i>Maurea puctulata</i> (Martyn) | <i>Argobuccinum tumidum</i> (Dunker) |
| <i>Risellopsis varia</i> (Hutton) | <i>Austromitra rubiginosa</i> (Hutton) |
| <i>Marginella cairiona</i> Brookes | <i>Chemmitzia</i> sp. |
| <i>Littorina unifasciata antipodum</i> Phil. | <i>Lyroseila chathamensis</i> Suter |
| <i>Zeacumantus subarinatus</i> (Sowerby) | <i>Eatonella</i> (Dardanula) <i>olivacea</i> (Hutton) |
| <i>Cominella maculosa</i> (Martyn) | <i>Modiolus areolatus</i> (Gould) |
| <i>Panula allani</i> Finlay (from beach grit | <i>Aulacomya ater</i> <i>maoriana</i> (Iredale) |
| Owenga. One or two good specimens. | <i>Borniola reniformis</i> (Suter) |
| <i>Sigapatella novaezelandiae</i> Lesson | <i>Modiolaraea impacta</i> (Hermann) |
| <i>Argobuccinum tumidum</i> (Dunker) | <i>Venerupis</i> (<i>paphirus</i>) <i>largillierti</i> (Philippi) |
| <i>Diloma</i> sp. juv: <i>aethiops</i> or <i>subastrata</i> | |
| <i>Diloma arida</i> | |
| <i>Marinula filholi</i> Hutton | |
| <i>Siphonaria novaezelandiae</i> | |

- 000 -

Further records of Introduced Land Snails;

Chris. Dawber has found both *Lauria cylindrica* (da Costa) and *Valonia pulchella* (Mull.) in the school grounds at Onehunga.

Hamish Spencer discovered several specimens of *Vertigo pygmaea* (Drap) sheltering under some timber in their garden at Northcote.

- 000 -

Limaria orientalis ;

Although the numbers of this bivalve living between tides, has been very much reduced after successive easterly gales in the last year or two, they have been observed in several places recently, on Auckland's east coast. At least 15 or so were seen in one area, mostly in their nests of shell grit and debris, and though most were young, some of the animals were quite mature. In the same area, the blue mussel *Mytilus edulis* *atecanus*, seems to be on the increase. This species, though quite common in the Bay of Islands, is much more at home in the South Island.

THE COMINELLA MAT

N. Douglas

Hvae you ever made a Sea Mat ? My first was made about a dozen years ago. It was a yard across ! Weighted down with half bricks, it was also the proverbial "half ton" ! But then, don't I always do things the wrong way the first time ! Later when the size was greatly reduced, the shell catches simply multiplied.

In every way it was better. See Diagram.

Some samples of one-lift catches, with this model, are listed below.

EAST CAPE AREA; Set off the Tolaga Bay wharf at night, 20-5-1967.

60 live Corinella excoriata tolagaensis Ponder 1968, (first found in this area), 26 live Buccinulum, 1 Cominella glandiformis (with hermit crab) 1 Lepsiella scobina (with crab), and one Buccinulum (with crab). This was all in one lift of the Mat, remember ! There were several other similar lifts, some with Penion sulcus inhabited by hermit crabs.

SOUTH WESTLAND; Off Jackson Bay Wharf 23-4-1968.

A dozen shells, all with hermit crabs - Argobuccinum tumidum, Astrofusus glans, Xenophallium sp.

STEWART ISLAND; Set at night using a dinghy in the Lords River estuary 6-5-71.

72 Cominella nassoides, 4 Turritella (with hermit crabs) and 2 Buccinulum (with crabs).

COROMANDEL PENINSULA AREA; Off Whitianga wharf in daylight, May 1974.

Over 80 Cominella - assorted adspersa and maculosa, alive.

MANGONUI HARBOUR; Set off the wharf, 26-5-1969

One very good specimen of Maurea pellucida spirata (with crab) and three living Monoplex parthenopus.

BAY OF ISLANDS; Set at night off the big game fishing launch "Lady Julie", anchored in the bay at Roberton Island, 31-3-1967.

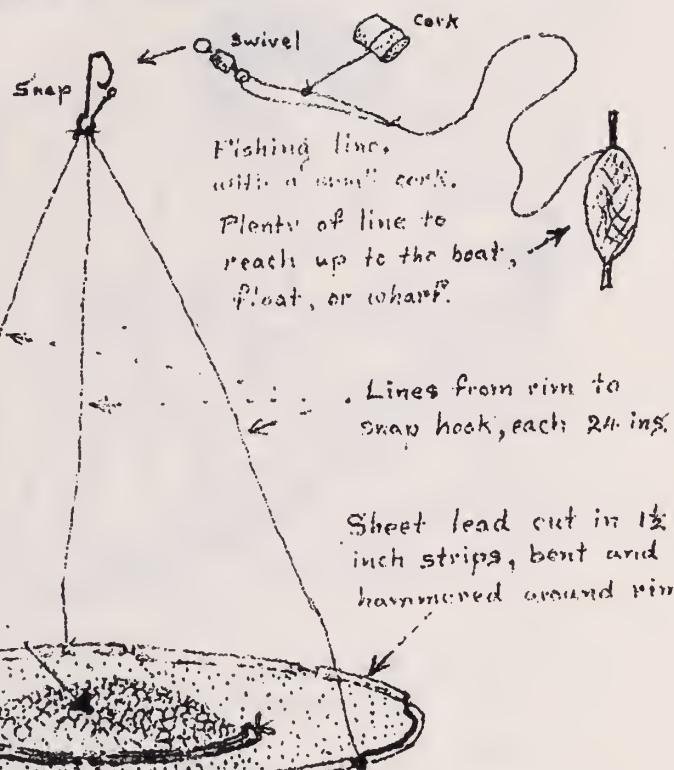
About 100 live Cominella quoyana were on the Mat by morning.

A CONNELLA MAT

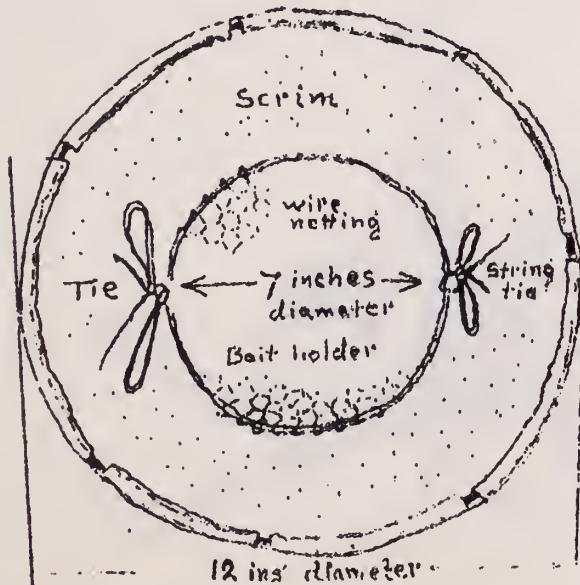
Bait holder. Good bait is a fish head, or smashed shell fish.

Rim of No 8 galvanized fencing wire.

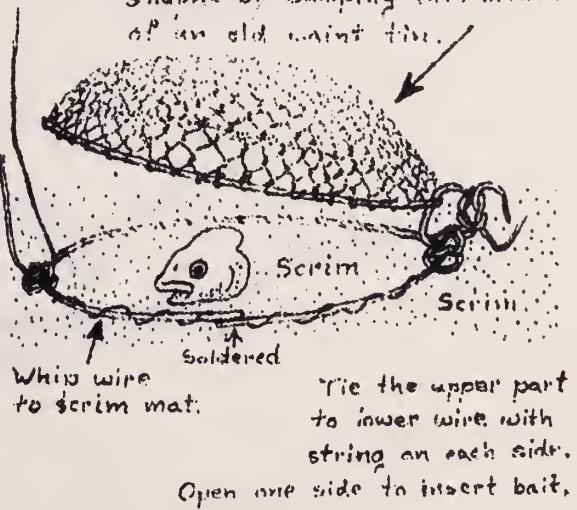
Scrim, whipped to outer rim.
Can be slack enough to sag a little.



Bait holder made of $\frac{1}{2}$ inch galv. chicken wire mesh. Can be shaped by bumping into mouth of an old paint tin.



Size of the scrim mat.

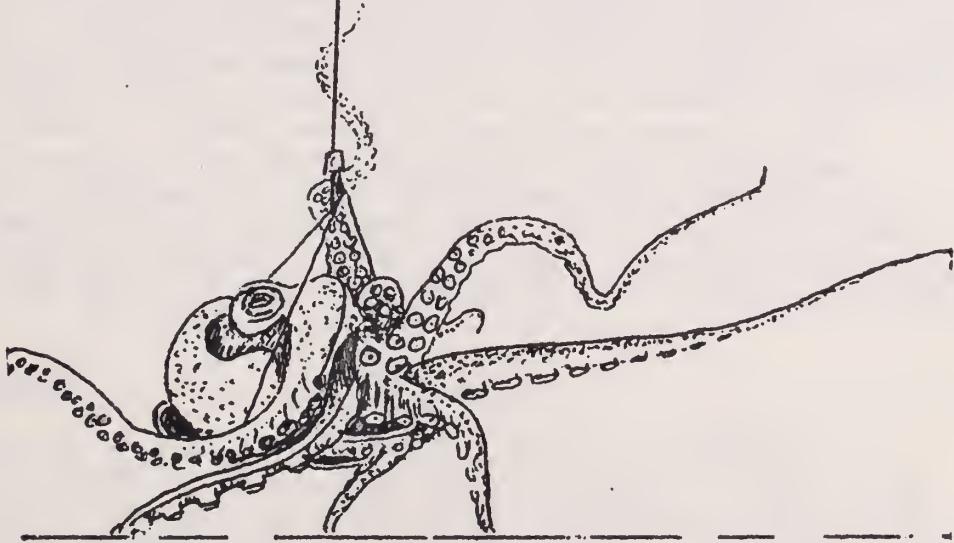


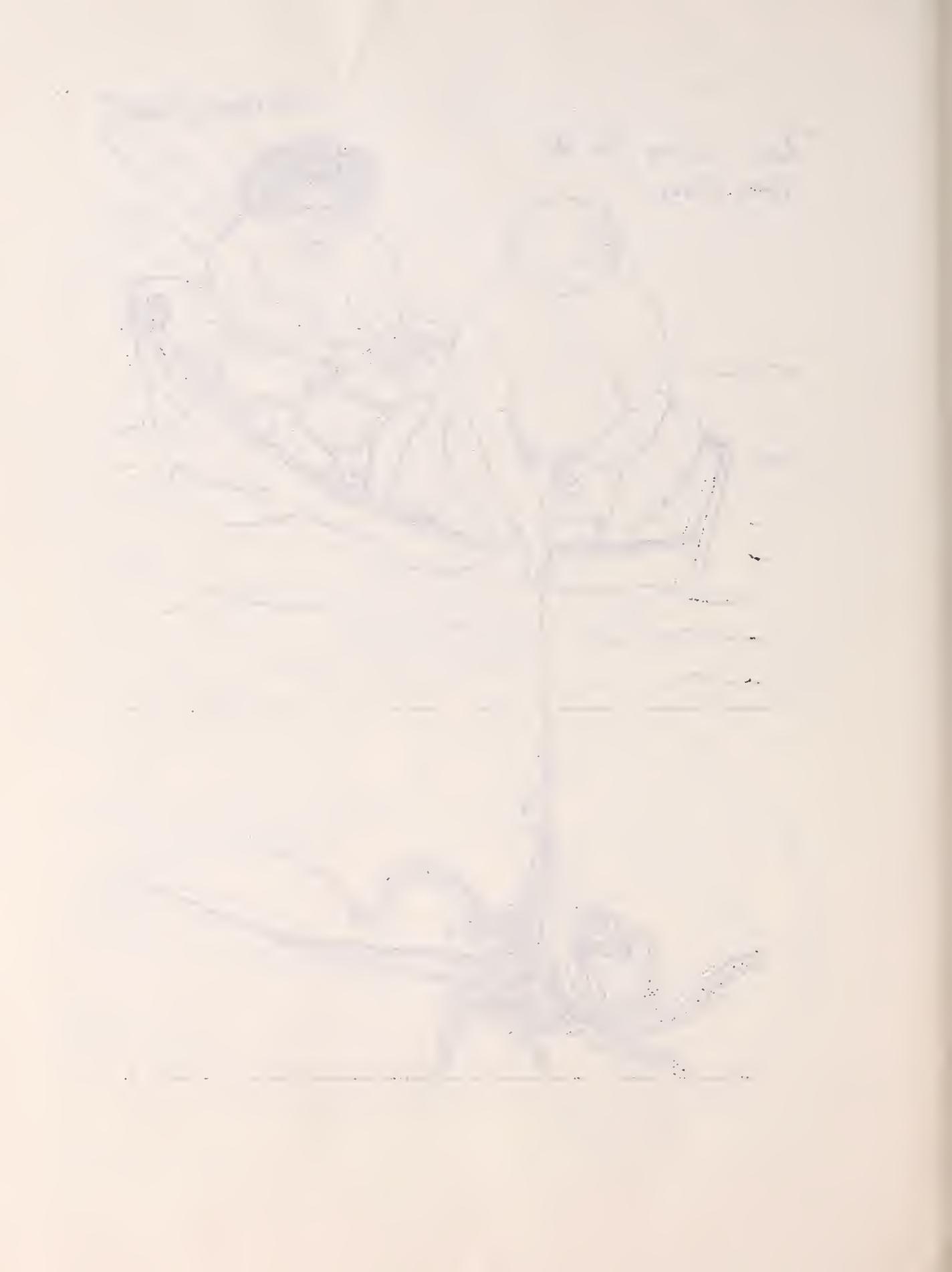
Detail of bait holder.

Norman Loughlin, 7-11-78.

"Lots coming up this time, Honey."

"Oh! Goodie, Goodie."





PARENGARENGA HARBOUR; Set at night off Paua Wharf, May 1966,

Dozens of dark cheokor.- board coloured Cominella quoyana and one albanistic.

FIJI; Set off the Yacht "Marira", anchored off Tuvutha Island, in the Lau Group, 22-8-1977.

One large live Cypraea erosa. This, just for an axample of a strange catch.

The above single -lift catches, selected from my field note books, should give some idea of the great variety of molluscan material to sort through when using this trap. Of course, most of it will be returned whence it came, but you will have a great selection.

Strange indeed are some of the catches. The scavenger hermit crabs use almost any kind of empty univalve shell for a house, hence the shells taken are not necessarily all carnivores, or scavengers. Trochids and turbins are common. Even non-hermit crabs and small fish get a shock to find they have reached the surface unawares!

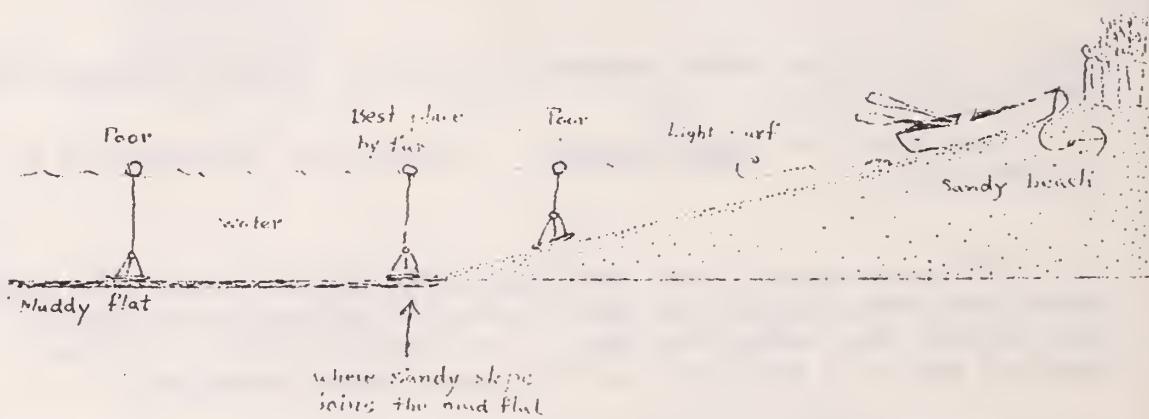
And you may get a shock yourself when you discover that the expected load of small shells coming up, turns out to be a large octopus ! - but they usually slide off half way up.

By far the best results are obtained by setting the Mat at night. Usually, one hour at night will be better than several hours by day. Wharves are, as a rule, good setting points, choosing slack tide, either high or low. Boats at anchor provide special opportunities. However, if left set over night, the swinging of the boat on a long warp, through change of wind or tide, can drag the mat onto coral, rocks, or simply plow it into the sand. A great amount of slack line can be let off, certainly, but again, it has its tangle hazards in some locations. A mat set under a buoy, can be lifted off by rising tide and carried a great distance, if this is not allowed for. Two Mats, set only a few yards apart, may give widely different results. One may catch nothing while the other has a lot in it. One may be resting on a bunch of kelp!

ADDENDUM;

Gray and Alene Lee have just returned in their yacht "MARIRE", from the Solomon Islands. They report that, diving down to a Mat in the morning sometimes revealed no Olives on the mat, yet sand trails in all directions were leading to it. Where were they ? Gray found them in handfuls buried in the sand beneath it!

The following sketch shows something of what experience can teach



Cominella mal settings in an estuary, or sheltered bay.

ORUAWHARO (MEDLANDS BEACH), GT. BARRIER ISLAND.

R. Kindlcysides

During the month of November, I spent two glorious fine weeks at Medlands Beach, Gt. Barrier Id. While I was there, I visited one of our country members, Mrs. Gay Mitchener, who lives there. She sends her greetings to Club Members.

I spent a very happy afternoon with her and while she showed me some of her lovely N.Z. collection, she regaled me with stories of past visitors, and also of Charlie Osborne, the noted Gt. Barrier conchologist. This man, although having only one arm, (having lost the other in a fire-arm accident), farmed land at Rosalie Bay for many years. He gathered a wonderful collection of Gt. Barrier shells and was honoured by having the beautiful *Maurea osbornei* named after him. One of his enjoyments, I believe, was in disagreeing with the experts about shells!

From a collecting point of view, there were no "washups" of any note, while I was there, but I did find live, around the rocks, 1 Charonia lampas capax, 1 Astrea heliotropium, several Mayena australasia, Penion sulcatus, Buccinulum pallidum powelli, B. lineum, B. vittatum and two Muricopsis octogonus.

Mrs. Mitchener recalls how, many years ago she was horrified at seeing a local man break up good Charonia shells to extract the animal. He declared it was the best bait ever, for catching snapper!

" SEA BUTTERFLIES "

N.W.Gardner

This is one group of molluscs which is not well known to shell collectors and one but poorly represented in private collections. In fact, it is quite unlikely that some of our readers would recognize some of them as being molluscs at all, for in appearance, many do not conform to our idea of what molluscs should look like.

They are also not easy to secure, as they live a pelagic life in the plankton of the open sea, and to capture them it is necessary to tow a fine net behind a boat.

There are two distinct groups, and of these, the Heteropods are considered to have evolved from the Prosobranchs, as have the violet snails, Janthina. They are often elongated, comparatively fast swimming molluscs equipped with 'telescopic' eyes and well adapted for catching medusae, copepods, tiny fish and even other 'sea butterflies'. The Pteropods, on the other hand are very active Opisthobranchs—also well endowed for swimming, having the two parapodia drawn out into membranous wings with narrow muscular bases which are used to row or flap in the manner of butterflies. Pteropods are divided into two groups; the shelled ones - Thecosomata and those which are naked - Symosomata.

Although 'sea butterflies' normally live near the surface, it is possible to sort out some examples from bottom dredgings - empty shells which have settled down after the animal has died. Dredgings from around the Three Kings Islands, have yielded quite a number of the species recorded from New Zealand waters.

The following species have been recorded from N.Z.

Heteropoda

ATLANTIDAE;

Shell spirally coiled in one plane, (as in fresh water Planorbis) Foot divided into two parts, - posterior part has an operculum while the anterior section has a sucker.

Atlanta lesueurii (d'Orb.)

Shell discoidal, transparent, compressed, carinated, capable of containing whole animal.



Atlanta peroni Lesueur.

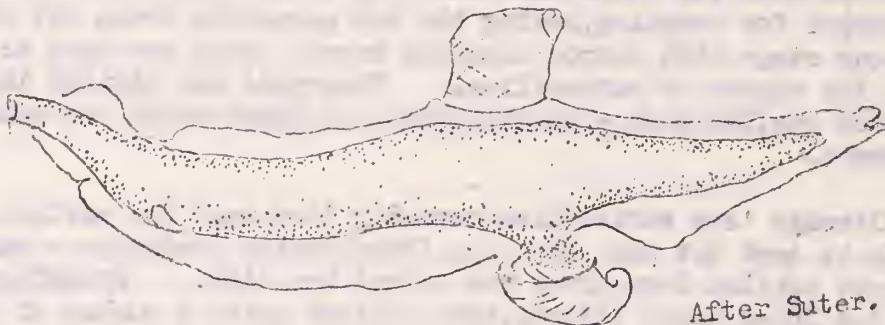
Similar in shape to preceding species, but larger.



CARINARIIDAE;

Carinaria australis (Q. & G.)

Shell small in proportion to animal, symmetrical, cap shaped, recurved apex, glassy. Animal elongated, large foot, flattened bilaterally as a fin. Shell 12.5mm.



After Suter.

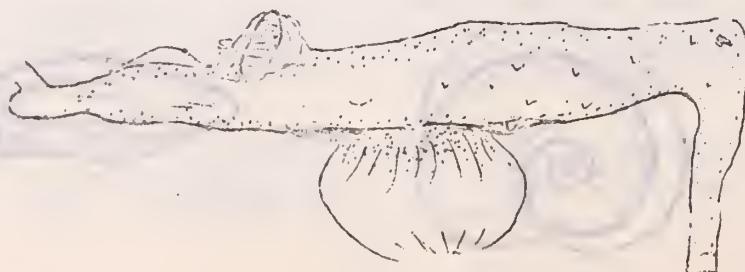
Cardiapoda placenta (Lesson).

Animal resembles Carinaria but has the visceral sac more posterior. Spiral shell, 2mm., brownish, cartilaginous, bilobed at peristome.

PTEROTRACHEIDAE;

Pterotrachea coronata Forskal

Animal elongated, large, whitish with a prominent ventral fin inserted behind the middle of body. 320mm.

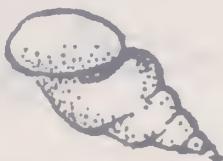


LIMACINIDAE.

Animal with fins attached to side of mouth.
The shells of the true Limacina are sinistral. Shell minute, spiral,
sometimes operculate.

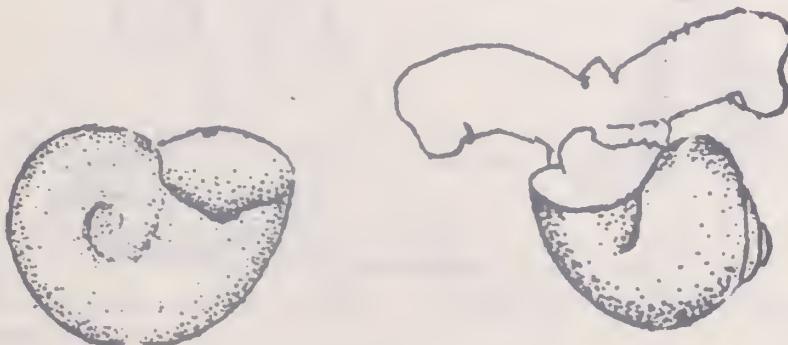
Limacina bulimoides (d'Orb.)

Shell minute, sinistral, globose. Plentiful
in dredgings from the Three Kings area.



Limacina inflata (d'Orb.)

Shell minute, glossy; This species is also
quite common in Three Kings dredgings.



Pteropoda

Thecosomata

CYMBULIIDAE;

Shell cartilaginous, elongated, shallow cavity along its length; tubercles in rows on outer surface.

Cymbilia parvidentata Pelseneer

Slender shell, elongated, constricted towards middle of its length. Spines on surface. Size, 35mm.

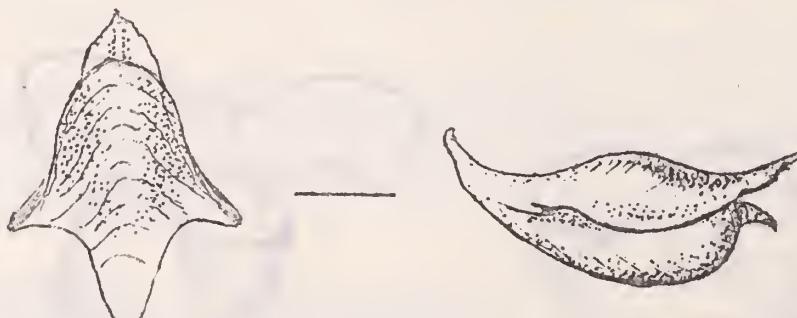


CAVOLINIIDAE;

Shell bilaterally symmetrical, not rolled up in a spiral, animal may be entirely retracted within the shell.

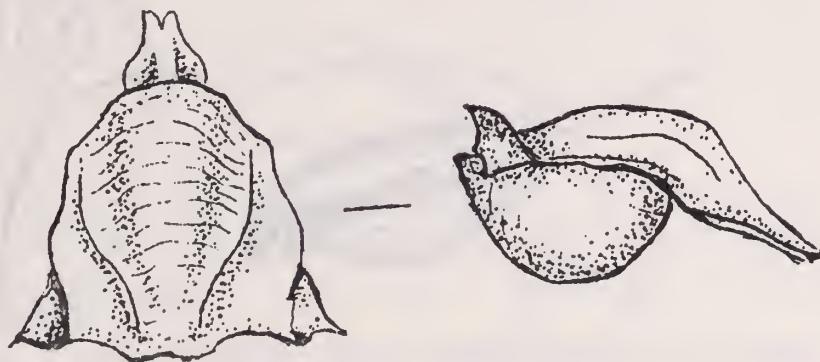
Cavolinia inflexa Lesueur

Non-spiral shell, elongated, somewhat compressed each side, recurved terminal point.



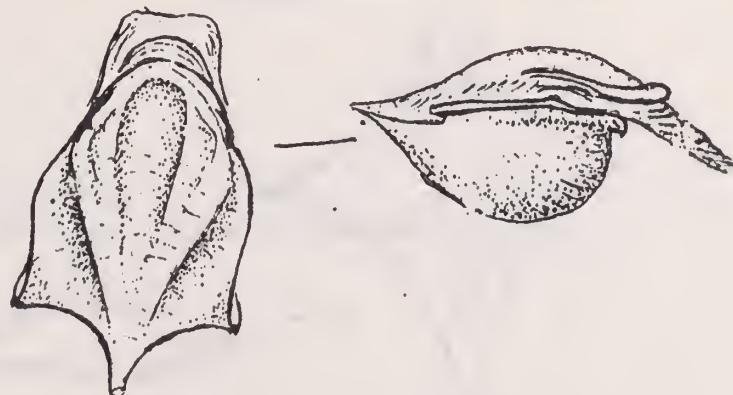
Cavolinia longirostris (Lesueur)

Shell globular with channelled beak and short hooked wings. Three ribs.



Cavolinia telemus (Linne)

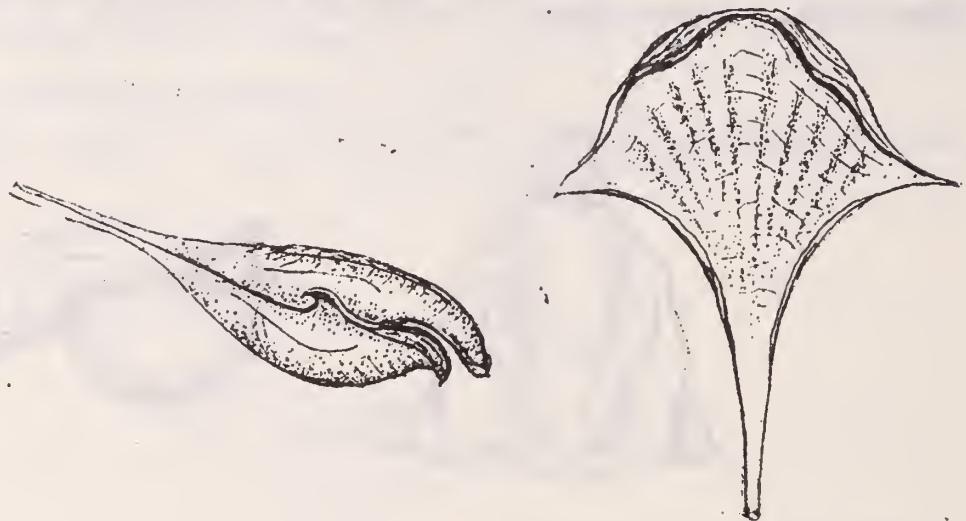
Rather like the preceding species but the terminal 'tooth' is larger. Lateral wings not so pronounced. Finely striated. Yellowish, pelucid.



Cavolinia (Diacria) trispinosa (Lesueur)

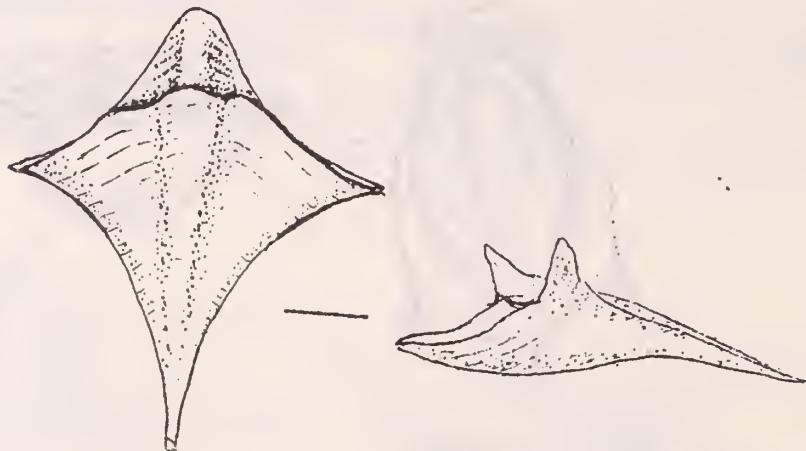
Shell of depressed 'Kite' shape, acute lateral spines and long straight caudal spines. Transparent white, longitudinal folds on surface. 11mm.

Cavolinia (Diacria) trispinosa Lesueur.



Clio pyramidata Linne

A triangular or cone shaped shell, compressed laterally. 10 mm.



Herse columella (Rang)

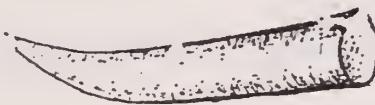
Shell straight, elongated, smooth surface, with the posterior half, conical and pointed. A partition towards the middle of the shell is a little inflated. size.14mm.

Herse columella



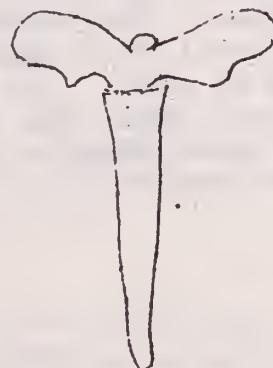
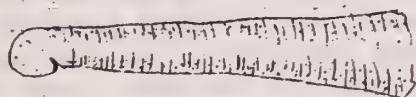
Creseis virgula Rang.

A tiny tusk-like shell, slightly curved and about 1 -2 mm in length.



Styliola subula(Q. & G.)

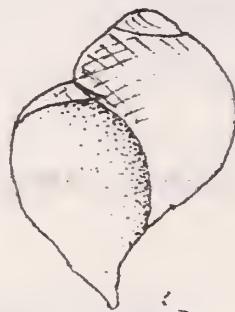
Shell small, pointed, conical in shape.



PERACLIDAE

Peracle sp.

Minute sinistral spiral shells of an indeterminate species, have been taken off the Northland coasts.



The figured specimen is
Peracle reticulata (d'Orb.)
height 1.5mm. (from off the
Brazilian coast.)

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Extract from Woodward's" Manual of Mollusca "1876, on the European pearl mussel, Margaritifera margaritifera (Linne);

"This species, which afforded the once famous British pearls, is found in the mountain streams of Britain, Lapland and Canada; it is used for bait in the Aberdeen Cod-fishery. The Scotch pearl-fishery continued till the end of the last century, especially in the river Tay, where the mussels were collected by the peasantry before harvest time. The pearls were usually found in old and deformed specimens; round pearls about the size of a pea, perfect in every respect, were worth £3 or £4. The mussels were found set up in the sand of the river-beds with their open side turned from the torrent; about one in a hundred might contain a pearl, and one pearl in a hundred might be tolerably clear."

- 000 -

NEW PUBLICATIONS

The Nomenclature of Three Pacific Bulla Species.

by R.C.Willan
Zoology Dept.
University of Auckland.

J.Malac, Soc. Aust. 4 (1-2);57-68. 1 July 1978.

Summary;

The correct nomenclature is established for Bulla quoyi Gray Dieffenbach, 1843, Bulla angasi Pilsbry, 1893 and Bulla vernicosa Gould, 1859. Full synonymies are given as well as descriptions and locality records.

The Genus Neilo in New Zealand (Mollusca; Bivalvia).

by B.A.Marshall
National Museum of
New Zealand, Wellington.

New Zealand Journal of Zoology, 1978, Vol.5,425-436.

Abstract;

The phylogenetic history, paleontological implications, and ecology of larger New Zealand Recent species of Neilo (sensu stricto) are discussed. N.wairoana delli, N.blacki, and N.(Pseudomalletia)aoteana are described as new. The following taxa are reduced to chronosubspecies: N.jugifera Marwick - of N.australis (Quoy & Gaimard); N.annectens Powell and N.rugata Dell - of N.sublaevis Marwick; N.sinanqua Finlay - of N.awamoana Finlay.

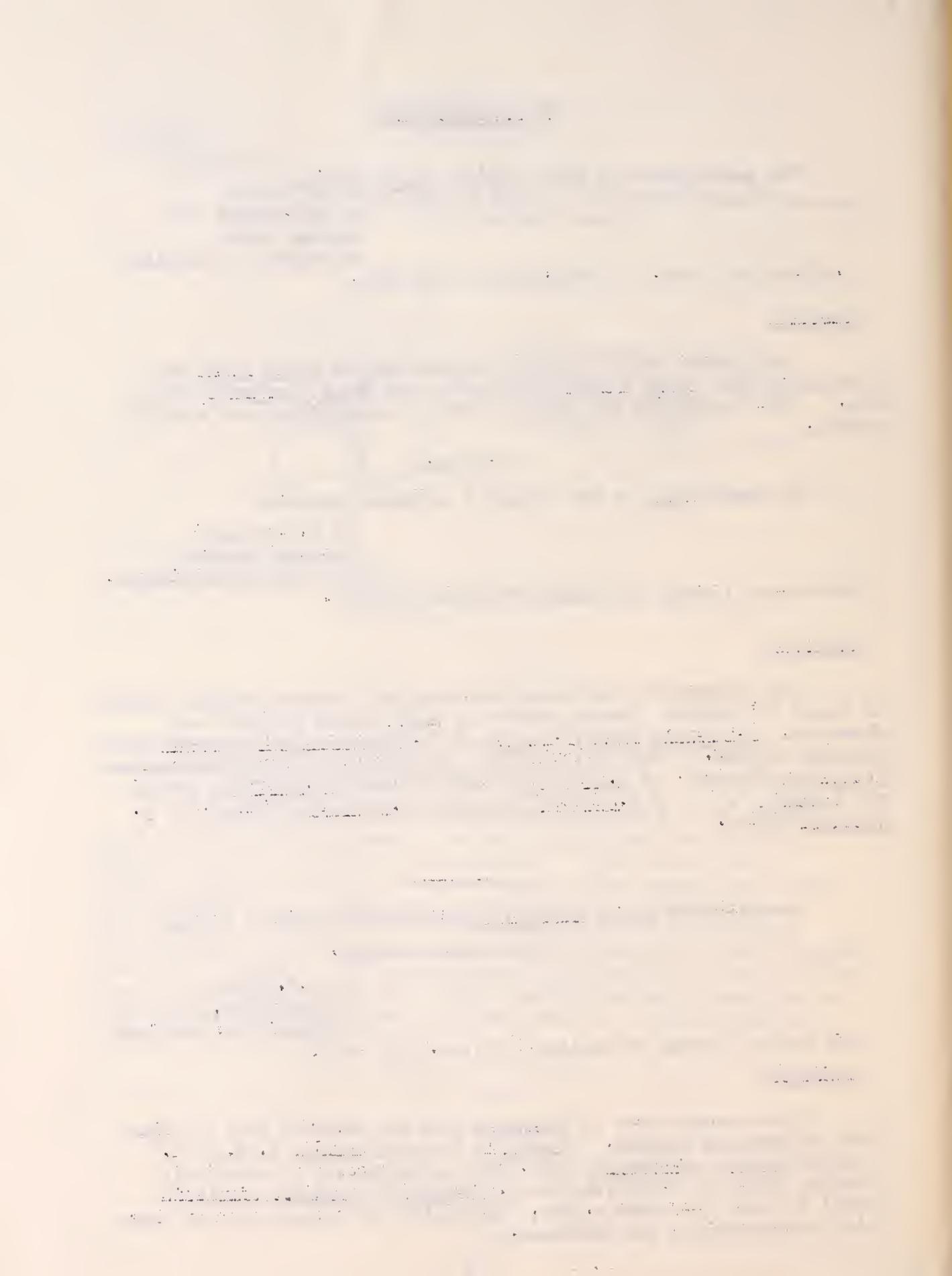
The Molluscan Genus Cominella (Gastropoda:Buccinidae) at the
Three Kings Islands.

by R.C.Willan
Zoology Dept.
University of Auckland

New Zealand Journal of Zoology, 1978, Vol.5,437 -443.

Abstract;

Three endemic taxa of Cominella Gray are recorded from the Three Kings Islands, New Zealand. Cominella (Josephia) regalis n.sp. and C. (Josephia) quoyana griseicalx n.ssp. occur sympatrically in relatively shallow water (to c.50m), whereas C. (Eucominia) mirabilis mirabilis Powell is known only from c.180m. The history of colonisation by these taxa is hypothesised and discussed.



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POIRIERIA



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P O I R I E R I A

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Part 2

May 1979

OUR FRAGILE BIVALVES OF THE GENUS SOLETELLINA. Blainville, 1824.

N.W.G.

Soletellina belongs in the family Psammobiidae along with the sunset shells of the Genus *Gari* Schumacher, 1817, but lacks the distinctive 'rays' of the latter.

Our two species are relatively common; occurring on most sandy beaches and in harbour situations where the bottom is somewhat muddy. At times we have enquiries as to how these shells may be identified, for it is not easy if you haven't examples of each to compare. Points for identification are; Outline, Position of hinge, Colour of epidermis, and Colour of interior.

Soletellina nitida (Gray 1843)

In this species, the anterior end, from the hinge forward, is considerably longer than the posterior end which is subangled.



The epidermis is almost transparent, shiny, yellowish brown. This is generally worn off around the umbones exposing the purplish shell, which is also the same colour within. Grows up to 50 mm. Found throughout New Zealand in shallow water, sandy situations.

Soletellina siliqua (Reeve 1852)

The anterior end, from the hinge forward, is much shorter in this species and the ventral margin is evenly rounded, giving the valves an oval outline.

The epidermis is often heavier and yellowish or greenish brown in colour.

The valves are probably a little stronger than those of the previous species and the colour of the interior is from white to purplish white. Also grows to 50 mm. in length.



This species is more likely to be found in sheltered situations where the bottom is fairly soft - throughout New Zealand.

Shells of *Soletellina* are wafer thin and move easily through the sand. They are active burrowers and deposit feeders. The siphons are long and slender, the inhalent one reaching out of the sand to move around above the burrow in a radius of several centimetres.

— oOo —

RESOLUTION BAY, MARLBOROUGH SOUND.

G. Forman

The Marlborough Sounds offer good opportunities for collecting shells within the sheltered waters of its many bays and inlets. Throughout most of the Sounds a narrow, rocky band forms the intertidal area and then drops away into deep water.

Resolution Bay, in Queen Charlotte Sound is one such bay, and as luck would have it, my last visit coincided with the lowest and highest tides for many years. The extreme low tides brought to light many species which live below the normal low tide. The very high tides brought a few problems as it lapped the top of a nearby jetty and boatshed floor. A large tree which had come up on the beach some seven years before, was lifted off by the tide and was last seen drifting away round the bay.

For this visit, shoreline collecting was mainly confined to the area near our campsite, consisting of a 'beach' of boulders varying in size from small flat

pebbles to large rocks which were difficult to move. At either end of this beach are steep rock faces high up on which, small numbers of Notoacmea pileopsis can be found in cracks and under small overhangs. Other limpets which are common at a lower level on the rock faces and on the large boulders, are Cellana ornata and Cellana radians. The periwinkle Littorina cincta are few and far between. The only specimens seen were in the same crevices and overhangs as Notoacmea pileopsis.

The boulder beach, consisting of rounded sandstone rocks, offers a very stable habitat in these sheltered waters. They lie partly buried in coarse sand.

The blue mussel Mytilus edulis aoteanus is the first shell to catch the eye. It forms a dense carpet over the rocks at the mid-tide level. Not many other species are obvious on the surface of the rocks, apart from Cellana ornata, C. radians and a few Diloma zelandica and Lepsiella scobina scobina. Hidden among the blue mussels are small numbers of the ribbed mussel, Aulacomya ater maoriana and Risellopsis varia.

It is underneath the boulders among the small stones and coarse sand that a number of species are present, often in large numbers. - From high tide level down to about mid-tide, two trochids, Diloma nigerrima, in groups of a dozen or more, and more scattered, the southern form Diloma bicanaliculata lenior.

Further down the shoreline, and in the same situation, a common shell is Buccinulum vittatum littorinoides. All specimens seen were thin, very elongated shells. Of thirty specimens noted, twenty nine were marked with narrow spiral lines, only one having the three broad spiral bands. Buccinulum lineum lineum are also present in small numbers.

Apart from the mussels, the only bivalves occurring in large numbers are pipis, Paphies australis, clustered together in small pockets of sand between the large stones.

Because of the very low tides, it was now possible to find a number of species which are usually well out of reach of a wading collector. Most of the large rocks had 'nests' of Modularca impacta attached under them. Also found in small colonies on the underside of rocks are the uncommon Monia zelandica. Though usually in groups of three or four, one rock had a dozen specimens on it, many being attached to old dead shells.

Occasional specimens of the southern fan shell, Chlamys dieffenbachi are also found attached to these rocks. The star limpet, Cellana stellifera is quite plentiful washed up onto the beach but it is in this deeper water area that the first live specimens could be found. Also at this depth, the Paua Halictis virginica virginica is quite plentiful. I had first found H. virginica virginica in a small bay, together with Halictis iris, near the southern point of Resolution Bay. On this latest trip, I found them spread all round the Bay. Of the many species found at extreme low water, one to catch the eye was Penion sulcatus. All specimens seen were of the rounded 'mandarina' type of shell. Though most of them were small specimens, one large, very smooth shell measured 130mm. by 60mm.

Only a few feet out from the low water mark, the ledge of boulders ends and drops into deep water, and the methods of collecting from this deep water are many and varied.

While fishing, a four prong, grapnel type of anchor is used to hold the dinghy. - As most fishing is done very close to the ledge - often within 20 metres of the shore, but in 20 metres of water, the sea floor is littered with debris from the ledge. Sometimes when hauling in the anchor, one of the tines will hook into a piece of this debris, which is brought aboard for close inspection. It usually consists of a rock covered in a variety of creatures - tubo worms, ascidians, sponges and seaweed. Many molluscs find a home among these creatures. Prominent among these are shells which live in crevices - Hiatella arctica and Notirus reflexus. Fine specimens of Cardita aoteana and Chlamys dieffenbachi are also found on these rocks. The Chlamys dieffenbachi are always covered with sponge and are often hard to spot, tucked away among the other inhabitants of the rock.

A very successful method of obtaining perfect specimens is when catching a few blue cod for bait or dinner. After cleaning the cod, the gut contents are washed and sorted. Shells commonly found this way are Chlamys dieffenbach without the sponge covering, Linatula maoria and Nemocardium pulchellum. Single specimens found this way have been, Mesopeplum convexum and a tiny Pecten novaezelandiae.

I have caught a Poirieria zelandica by a most unlikely method. On reeling in a line to rebait, a small, long spined Poirieria zelandica was clinging to the remains of the old bait.

Dredging from the dinghy has brought up a good selection of shells from Resolution Bay. The gear we used is fairly crude, being an old five gallon tin, which is first used to carry gear to the camp, and then converted to a dredge. Apart from a couple of small shallow bays with sand bottom, we had expected the deep areas of the main bay to have a soft mud bottom, but we were very much mistaken. Wherever the dredge was used, it picked up a mixture of broken rock, coarse sand and on only a couple of occasions, some mud.

Some species were found only when mud was recovered. A very pleasant surprise from this mud was Theora lubrica - two live specimens, along with two species of tusk shell, Dentalium namum and D. zelandiae which were both plentiful.

Many species were found among the broken rock and sand, some being very plentiful. Among the most common species are Tawera spissa, Notocorbula zelandica, Scalpomactra scalpellum and Analda novaezelandiae. Other species quite plentiful in the bay are Gumina dolichostoma, Leicina huttoni, Pleuromeris zelandica and Maoricopius roseus.

A single valve of Dosinia greyi, a few Notocallista multistriata and Zeacolpus delli were also good finds. Other species picked up in small numbers included Antisolarium crenatum, Mucula strangei, N. bellula, Tanea zelandica, Estea rockebuana, Balcis vegrandidis and Nozeba emarginata.

CUR COLLECTIONS AND COLLECTORS

Derek I. Lamb.

The Editors of this journal have several times exhorted us to provide material for inclusion therein. As one of the general collector class, I have had a stirring of conscience and looked around for a reporting (rather than researching) job and came up with the idea of reporting on collections owned by our members. This, I very soon found out, takes a little time but as I, probably in common with all members, enjoy just looking at, and talking about shells, it is a pleasant task.

I would appreciate any comments or suggestions to be covered in future as the two in this issue are intended to be the first of a series.

THE JOAN COLES COLLECTION.

Miss Coles needs no introduction to members, but as one has to start somewhere, she gets one nevertheless.

Joan started collecting and joined the Conchology Section just before the Exhibition in 1963. Right from that year, she has been involved in committee work and indeed still is, including, of course her service as President from 1972 to 1976.

Miss Coles has collected overseas in Queensland, New Hebrides, The Loyalty Islands and Norfolk Island (her article on the Loyalty Is. appeared in Vol. 9 Part 4 of *Poirieria*), and is one of the most regular attenders on Club outings. Apart from personal collecting, she has exchanged a few shells, purchased a few, (an *Oliva rubrolineata* from the New Hebrides' trip, was a pleasant sight - previously, I had known this shell only from a colour plate in 'Marine Shells of the Pacific' Vol. 2.), and in 1975, she was bequeathed the Volute and Murex sections of the collection made by Mrs. J. Wyatt.

Although Miss Coles does not keep an Accession Book or Catalogue, she has compiled schedules of the shells collected in the New Hebrides and the Loyalties and these check lists will be of great interest to anyone contemplating a visit to either of these areas.

The collection's strength naturally reflects Joan's favourites which are the Volutidae, Terebridae, Naticidae, Nassariidae and Muricidae. The 'goodies' noted included Xenophalium royanum, Voluta abyssicola, V. lutescens, V. roadnightae, V. arausiaca, V. papillosa, V. tibiaformis, Neptunopsis gilchristi, Livonia mamilla (leucostoma), Homalocantha zamboi, scorpio and anatomicus, Murex pazi (120 Fms. off Tampa), M. Bipinnatus, Oliva rubrolineata, Columbarium pagoda, Conus bullatus, C. rutilus, Cypraea catholicorum, Strombus listeri (there are two since the 1st. Auckland Shell Show!).

Apart from the rarities there was, of course, much more of interest as the following selection might indicate. My attention was especially caught by a beautiful Strombus latissimus with full colour and no corrosion, an

extremely large Murex radix (the black and white Murex from Mexico), a lovely Cypraea lynx from the New Hebrides with large but few spots, or should that be with few but large spots? - a large Cypraea ventriculus from Niue, and a 7" Turritella terebra. But what about a humble Dosinia -D. ponderosa from the Sea of Cortez and measuring 4" across, the same size as a Periglypta reticulata collected by Miss Coles at Yeppoon.

New Zealand is well represented and included in the collection are Morula chaidea, M. palmeri, Latiaxis lischkeanus (Tolema peregrina), Aeon hancocki, Talabriga bellula, Terefundis cuvierensis and Fusinus genticus from Great Exhibition Bay.

Several shells brought forth their particular stories, two of which must suffice, however.

On a Club visit to Kawau Island, a group were laughing at Joan's repeat performance of instructions on how to locate a Charonia. She explained -amidst hilarity- how to bend down, put one's hand under a rock ledge, search around - and capped the performance by pulling out a fine C. capax. Another incident occurred at Mele Beach in the New Hebrides when as the very last member of the party moving along the beach, she found her Conus nimicus. We've all heard this kind of story - perhaps those rushing ahead don't let on about their successes!

I spent a most enjoyable evening looking at shells and discussing them with Joan. Her love of shells was demonstrated when, having asked about her favourite families, I asked if she had any likes or dislikes. She commented, "No dislikes - I like all shells but simply like some more than others!"

Footnote. (Headnote?) One can lose one's head in Joan's shell-room, quite literally, so taller members please bow your head reverently on entering.

THE HOLLOWAY AND STEVENSON COLLECTION

Miss Holloway needs no introduction to our Auckland members but many of the newer members will not have seen this magnificent collection nor know the background to it.

Miss Holloway started collecting 60 years ago, and 'in earnest' since the 1920's. Arthur Stevenson began collecting in 1915, first met Dr. Powell in 1916, and became one of the earliest members of our club. In 1942, Miss Holloway and Mr. Stevenson decided to amalgamate their collections and the joint collection flourished until 1955 when Mr. Stevenson moved out of Auckland. They were then faced with the difficult task of sharing out the collection, and this took about five years to complete! Only ten years later, circumstances again changed and the two collections were re--and finally- amalgamated. The united collection is now, quite obviously too large for any further flings of this nature,

The sources of the shells are many indeed. During the late 1940's and the 1950's, about a letter a day was being despatched to overseas collectors for exchange contacts and very many of these were fruitful.

I would hate to estimate the costs of the parcels at present rates of postage. No oversea collecting has been enjoyed by Miss Holloway, and very little by Mr. Stevenson, but their collecting in New Zealand has been extensive.

The collection is housed in the basement which probably maintains a less fluctuating temperature than that suffered by some collections. The extent of the excavations bears out the enthusiasm of the owners for the collection. Standard sized trays are arranged generally in sequence according to Thiele. As in all collections, some specimens are displayed in cabinets for the 'oooh and Ah' brigade. All specimens are carefully catalogued in an accession book and again by family and individual shells are numbered in Indian ink. Numbers are applied down to the smallest shell on which they can be written and Mr. Stevenson writes small figures very neatly and clearly indeed! He has a fair amount of practice too.

The library is extensive, rather fewer of the glossy coffee-table types but well endowed with Transactions and Proceedings etc.

The size of the collection is rather breath-taking and seeing is believing but in over 14,000 lots - could be over 100,000 specimens. Conidae, for example are represented by 1,350 specimens covering 120 species. Rarities there are, as must be with so many shells, but they remain discreet, almost unnoticed among the vast array. In fact, despite oohing and ahing myself, I took fewer notes of rarities than on other occasions. Of special note however, were the displays of Paryphanta, Placostylus, Poirieria and Xenophoras, and I did note the Toloma, Cypraea mus, C. hositata howelli (the white one) and C. aurantium (in the plural). Commoner shells of particular interest or beauty included Strombus latissimus, Conus gubernator, C. acutangulus, Cypraea reticulata and Cypraea histrio westralsis.

No particular families are favourites because of the museum nature of the collection, but at the present time, Mr. Stevenson is working on the Conidae and is naturally looking for material in this family.

Miss Holloway also has an impressive collection of rocks and minerals, but time did not permit more than a cursory look at this. Miss Holloway was the second Secretary of the club and was involved with the introduction of study-groups which still continue in the form of Buzz-groups. She was a committee member for several years, and presented me with a copy (in mint condition) of Bulletin No. 1 dated 1st November 1940. This includes the program for the year in which two subjects noted were, "How Shellfish Grow Up", by A.G. Stevenson and "Shellfish of the North Shore Reefs", by Miss N. Houghton. Two of the four pages list additions and alterations to Dr. Powell's checklist. Who said, "times change".?

A collection of photographs of visitors included not only the big guns from our own Club, but also those of Drs. Clench, Tucker-Abbott, Chasco, F.K. Godfrey, and Miss Joyce Allan along with a host of well known collectors.

The two afternoons spent viewing the collection were full of interest, but more time is required to do it anything like justice.

NOTES OF INTEREST

Even in the most unlikely places, land snails persist - and this is especially so along the "ninety mile" isthmus of Northern New Zealand. Several species are to be found living on the odd Punga fern, and fallen litter, growing in the tiny pockets of scrub behind the sand dunes.

On Mt. Camel, where there are old Punga ferns amongst the scrub, Phenacharopa novoseelandica (Pfr.), that tall charopid which has chosen to be so different from other species of the family, lives in quite reasonable numbers.

Another unlikely looking place is on the steep pinnacle of rock in the entrance to the Houhora Harbour. Under the rather sparse vegetation, in dry crevices, four species of land snails have recently been collected;

Tornatellinops novoseelandica (Pfr.) Very numerous under flax bushes.
Allodiscus urquharti Suter. A single example.
Laoma (Phrixgnathus) conella (Pfr.) Moderately common.
Paralaoma sp. (generally referred to as n.sp.24, by our land snailers) extremely common.

Although Hydatina physis (Linnaeus) is quite a common mollusc in Australian waters and has an extremely wide range from Africa to Japan and the Indo-pacific, it is a great rarity here in New Zealand, though the shells are considerably larger than those found in Australia. (One in our collection measures 52mm x 42mm).

At the end of April, David and Ross Hesketh disturbed two specimens which had been buried just below the surface of the sandy mud near low tide at Paua, on the Parenarenga Harbour. The beautiful rose pink animal with its wide frill edged with bright blue was a wonderful sight. The larger shell was faded and broken about the edge - maybe it had been walked on !, but the other was brought home and kept in the marine tank, where it has been quite happy and much admired. About ten days ago the Hydatina laid an egg mass; cream coloured ruffled and about 30 mm. in length, it is attached by a small string into the sand. Whether the eggs are fertile or not remains to be seen, but we have not heard of the Hydatina physis breeding in these waters before. A third shell, in fragments was also picked up at the same time - probably the seagulls knew something about that !

Mrs. C. Bissett writes, " Last November I went out to Oreti beach about 8 kilometres from Invercargill. I biked out using the cycle track which is planted with flax, Hebes and tree lupins as it winds past the New River Estuary on one side and the Waihopai River and Airport on the other. The beach is of grey white sand and is not unlike Orewa Beach in the North. Bluff can be seen on the left and Riverton far in the distance, to the right. Stewart Id. was enveloped in a misty blue cloud. In pioneer days, Cobb & Co's coach and

horse teams ran regularly over Oreti Beach from Invercargill to Riverton.

The week previously, there had been gale force winds, and three hours and two sunburnt feet later, I had found quite a number of interesting shells washed up. There were 12 single valves of Chlamys dieffenbachii in colours of red, orange and purple; an old but whole Argobuccinum tumidum, a Glycymeris laticostata with bright red markings, and several kinds of mussel. These included Mytilus edulis aoteana, Aulacomya maoriana and Modiolarca impacta; also single valves of Perna canaliculus and Modiolus aerolatus. Other bivalves were, Spisula aequilateralis, live juvenile Tawera spissa and Amphidesma forsteriana busy digging themselves into the sand when the sea left them uncovered. The Toheroa, Paphies ventricosa, lives here, buried well down but is strictly protected just now. A perfect Haliotis iris floated in, and there were several Haliotis virginea virginica, a two inch Cookia sulcata, a Xymene ambiguus, Trochus viridus, Trochus tiaratus, and Sigapatella novaezelandiae. There were many broken shells particularly of Maurea punctulata but eventually, I found a perfect two inch specimen. Many of the shells had a very blackened appearance as though they had been in a fire. A lot of the shells were rock-dwellers and could have come from the rocks at Riverton.

The commonest shells on Oreti Beach are Maoricolpus roseus and Zethalia zelandica.

A noticeable feature of the tide line was the number of large, brown leathery egg capsules of the Elephant fish, Callorhynchus millii.

The 90 Mile Beach on Northland's West Coast is often swept clean as far as the eye can see and nobody seems to be able to predict with any certainty as to when a worthwhile washup will occur, so it was quite a surprise to several of our members recently when they 'just went out to look' at the area near Houhora, and found the beach strewn with quantities of small Perna canaliculus (Gmelin), washed up in clumps.

Tangled up in the threads of the bysses were Austrofusus flans (Roeding), and other shells common to the coast, but along with them were hundreds of the usually uncommon and very attractive turritella, Zeacolpus ahiparanus Powell. The shells were all empty but in very fresh condition. This species comes ashore down nearer Ahipara at times, but is seldom seen at all near Houhora.

A MEMORABLE VISIT TO TE AREI BEACH

Patricia Vause

The devastating gale of July 1978 brought up many wonderful shells along the East coast beaches, and I had found more than enough treasures on local beaches around North Auckland, without venturing further afield. However, at the August Shell Club meeting, so many interesting shells from Te Arai Point, south of Mangawhai Heads, were displayed, that I regretted not having visited that locality also. As a month had passed since that tremendous storm, I doubted whether any good specimens would still be found on the Te Arai beach, and remembering fruitless trips in the past, to Omaha and Pakiri, I was hesitant to trek even further north to another empty beach. However, it was the first weekend of the August school holidays, and my three children were keen to try out their new home-made sleeping bags, so we quickly packed our gear into the van and set off for the weekend. The weather was not very promising and we did get lost once or twice after we left the main highway north of Wellsford, but eventually we saw the sea beyond a large coastal pine forest, and hoped we were heading for the right place.

As soon as we arrived, we investigated the rocks at the far right end of the lovely long sandy beach and found some remnants of huge Penions and Charonia lampas capex, smashed almost beyond recognition, but with the decaying animal and operculum, wedged firmly inside the skeletal remnant of the shell. A lot of very large Struthiolaria vermis and some S. papulosa were scattered over jagged high-tidal rocks, but they were beach rolled and battered. We had a horrible suspicion that those were to be our only finds for the weekend, - but lunch revived our spirits and so did the appearance of the sun, so we set off along the beach, to the north, admiring the pleasant surroundings and the view of the offshore islands - the Hen and Chickens Group and Little Barrier, and also the Whangarei Heads, further North.

Only a short distance along the beach, we started to collect plenty of fine shells. They were in a thick band along high-tide mark, mostly the two species of Struthiolaria. A few of the S. vermis were an unusual pink colour and a couple were a definite lavender shade, - most attractive. - We were especially pleased to pick up some lovely large specimens of Gari. These strongly-rayed shells have been known as the southern form of lincöltta as they are found commonly in the South Island and at Stewart Id., but in the last year or two, the storms have brought in large numbers on some of our northern beaches, and was the shell I had hoped most to find. Then we started to pick up plenty of Xenophallium pyrum, mostly small specimens but a lot were still alive or freshly dead with animal and operculum. We were surprised at the large number of X. pyrum with several strong growth varices. Some were so strongly marked that they had the appearance of tartan or plaid. Some large specimens of Xenophallium were found along the beach, including one good X. labiatum labiatum and two specimens of Xenophallium labiatum insperatum.

We collected a wide selection of different forms of Penion sulcatus, ranging from the smooth dark striped shells, to cream or light brown, strongly nodular shells, to mauve or white dilatatus type of elegant sculpture. Unfortunately most had their lips chipped or broken, or a hole in the side of the body whorl, though the animals were in some cases, still alive.

Very large, attractive specimens of Gari stangeri were plentiful, in the full range of colour patterns. Some beach specimens of Monoplex parthenopus, Cabestana spongleri and Mayena australasia were also added to the now over-flowing buckets. The children were especially excited at picking up some Alcithoe arabica with beautiful dark markings, ranging from the most delicate juveniles to huge, rugged adults - many still alive.

We walked as far as the river and stopped to sort through the scattered piles of Umbonium zelandicum at mid-tide, for smaller treasures - half a dozen large, fresh Amalda mucronata were the best find, but Maurea punctulata, Cantharidus purpureus, Tanea zelandica, Divaricella huttoniana, Diplodonta zelandica, and Bulla quoyi were also picked out.

A pair of delightful birds were running up and down the beach near the river mouth. They called frequently to each other as they moved along at considerable speed. When my son Geoffrey checked his bird books, he found our intriguing birds to be the New Zealand or Red-breasted Dotterel (Charadrius obscurus). Those two were the only birds of their species that we observed, though we walked a considerable distance along that quiet beach.

The long trek back to the van, with our loaded buckets and large plastic sacks slung over our shoulders, was very trying in the hot sun, but we could not resist rushing down to a freshly exposed deposit of shells in a small area at low tide. There we found Austofusus glans, Tanca zelandica, live Xenophallium and Alcithoe arabica ploughing through the sand, a few Xymene ambiguus and our first ever two specimens of Turritriton tabulatus exaratus, alive in the shallows. Six year old Deborah was thrilled with her Turritriton shell - she knew it was something special as soon as she saw it among the pile of debris, much to my surprise !

After a busy day we relaxed on the dunes, with a picnic tea, before going back to the high tide line of shells again, until a beautiful sunset reminded us it was time to set out our sleeping bags on the dunes for the night. Daughter Catherine was chatting to an elderly lady who was busy surfcasting and rather intrigued at the loads of shells being gathered from the beach by all of us. Fortunately for us, this kind lady offered us shelter for the night when a sudden appearance of rain damped our enthusiasm for sleeping out on the sand dunes.

Early next morning we admired the sunrise from her hilltop home, the warm rosy glow lit the dazzling white dunes and the cold steely grey surf and sea. It was an unforgettable awakening, with such a grand view and the loud rhythmical crashing of the breakers on the shore. We all stood outside and ate an early breakfast, while we planned the day's activities. We had been told of another road entrance, further up the beach, so we set off immediately to see if any different shells were to be found that morning.

The sand was ice cold under our bare feet, at 7 a.m., but we had an interesting walk for another hour, and picked up quite a few more shells as we approached Mangawhai Spit. The children amused themselves by following rabbit tracks along the beach and up across the dunes into the pine forest.

We decided to leave Te Arai and try our luck at Omaha on the return journey home, but the beach there was well cleared of earlier washups, and just as well, probably, as there were weeks of cleaning and sorting ahead from that wonderful Te Arai washup.

Other species collected at Te Arai, were as follows;

Pecten novaezelandiae (large, complete specimens), Chlamys zelandiae (halves) Solemya parkinsoniana (several, very large), Tawera spissa, Amalda australis, Longimactra elongata, Bassina yatei (worn quite smooth), Dosinia maoriana, D. anus and D. subrosea, Diloma coracina (inside bivalves), Thais orbita, Trochus viridus, T. tiaratus, Cockia sulcata and one each of the following;

Xenophora neozelandica, Poirieria zelandica, Paphies ventricosa, Maurea tigris, M. selecta, Haliotis iris, H. virginica crispata, Tonna coronis (broken), Argobuccinum tumidum, Astraea heliotropium, Venericardia purpurata and Waltonia inconspicua - both species from kelp holdfasts.

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DREDGING AROUND EAST CAPE

Bert. Lee

I fish commercially in the waters from Cape Runaway to Table Cape at Mahia Peninsula and I have done rather well in shelling from this area, though there are long spells when no shells come to light.

I carry on board, a dredge I designed and which was built by Bruce Shepherd. This works very well, though it is not used often. I do not know much about the shoreline shelling as time ashore is spent with my family and working on the boat. Collecting areas are as follows;

Runaway and Lottins (rock).

Te Araroa Flats (Mud).

East Cape (Coral & Rock)

Tokomaru Reef (rock).

Tolaga Reef (rock).

Arioi Reef inside and outside and
Cabbage Patch, which includes Table Cape.

We fish between 20 - 100 fathoms and call 20 - 50 fathoms, shallow water, and outside that, deep. The shells from shallow water between Gisborne and Hicks Bay, except where there is foul bottom, are common to the whole area. The bottom is mainly mud, and with muddy sand in the larger bays.

Some of the shells taken from these areas include;

I. Runaway and Lottins-

Trophon licinus (Hedley & Potter) Bonclitia superstes Finlay
Muricopsis octogonus (Quoy & Gaimard)

2. Te Araroa Flats -

| | |
|---|---|
| <u>Monodilepas monilifera cookiana</u> Dell. | <u>Solariella</u> (<u>Zetela</u>) <u>textilis</u> (Murdoch & Suter) |
| <u>Scrupus hyalinus</u> (Odhner). | <u>Tectisumen</u> <u>clytidellaeformis</u> (Suter). |
| <u>Tonna cerevisina</u> Hedley. <u>haurakiensis</u> . | <u>Poirieria</u> <u>zelandica</u> (Quoy & Gaimard). |
| <u>Zemitrella pseudomarginata</u> (Suter). | <u>Zemitrella</u> <u>regis</u> Powell. |
| <u>Zemitrella stephenophora</u> (Suter). | <u>Macrozastra</u> <u>nodicincta</u> (Suter). |
| <u>Iredalula alticincta</u> (Murdoch & Suter). | <u>Iredalula</u> <u>striata</u> (Hutton) |
| <u>Microvoluta marginata</u> (Hutton) | <u>Austromitra</u> <u>rubiginosa</u> (Hutton). |
| <u>Austromitra rubiginosa</u> -angulata form | " " <u>planatella</u> form |
| <u>Austromitra rubiginosa</u> -pseudomarginata form. | <u>Agatha</u> <u>georgiana</u> (Hutton) |
| <u>Daphnella cancellata</u> Hutton. | <u>Gumina</u> <u>dolichostoma</u> (Suter). |
| <u>Rhizorus nesentus</u> Finlay | <u>Cavolinia</u> <u>inflexa</u> (Lesueur), Two. |
| <u>Cosa costata</u> (Bernard). | <u>Cuna</u> <u>mayi</u> Powell. |
| <u>Nucula nitidula</u> (A. Adams). | <u>Ennucula</u> <u>strangei</u> (A. Adams). |
| <u>Sacella bellula</u> (A. Adams). | <u>Sacella</u> <u>hedleyi</u> Fleming. |
| <u>Bathyarca cybaea</u> Hedley. | <u>Poroleda</u> <u>lanceolata</u> (Hutton). |
| <u>Yoldiella powelli</u> (Dell). | <u>Zemitrella</u> <u>chaova</u> (Reeve). |

3. East Cape -

| | |
|---|---|
| <u>Solarella textilis</u> (Murdoch & Suter). | <u>Tasmalira</u> <u>vitrea</u> (Suter) = <u>wellingtonensis</u> |
| <u>Mondax trizonalis</u> (Odhner) | <u>Seila</u> (<u>Lyroscila</u>) <u>chathamensis</u> Suter |
| <u>Proxiuber hulmei</u> Powell. | <u>Uberella</u> <u>barrierensis</u> (Marwick). |
| <u>Amalda</u> = (<u>Baryspira</u>) <u>mucronata</u> (Sowerby). | <u>Amalda</u> <u>novaezealandiae</u> (Sowerby). |
| <u>Marginella maoriana</u> Powell | <u>Marginella</u> <u>cairoma</u> Brookes. |
| <u>Marginella</u> <u>sub fusula</u> Powell | <u>Marginella</u> <u>vidae</u> Dell |
| <u>Lucerapex angustatus</u> (Powell). | <u>Bathytoma</u> <u>dinlayi</u> (Powell). |
| <u>Taranis</u> = (<u>Fenestrosyrinx</u>) <u>gratiosa</u> (Suter). | <u>Aoteadrillia</u> <u>wanganuiensis</u> (Hutton) |
| <u>Antimelatoma ahiparana</u> Powell | <u>Antimelatoma</u> <u>benthicola</u> Powell |
| " " <u>buchananii</u> <u>maorum</u> (E.A. Smith). | <u>Austrodrillia</u> = <u>Regidrillia</u> <u>sola</u> Powell, |
| <u>Tomoplura</u> = (<u>Maoritomella</u>) <u>albula</u> (Hutton). | <u>Maoritomella</u> <u>orientalis</u> Dell. |
| <u>Antiguraleus</u> <u>fenestratus</u> Powell | <u>Antiguraleus</u> <u>murrheus</u> (Webster). |
| <u>Liracraca</u> <u>epentroma</u> <u>epentroma</u> (Murdoch). | <u>Liracraca</u> <u>odhneri</u> <u>odhneri</u> Powell |
| <u>Liracraca</u> <u>epentroma</u> <u>whangaroaensis</u> (Mur.) | <u>Pupa</u> <u>kirki</u> (Hutton) |
| <u>Acteon cratericulatus</u> Hedley | <u>Phline</u> <u>angasi</u> Crosse & Fischer |
| <u>Phline</u> <u>powelli</u> Rudman | <u>Phline</u> <u>constricta</u> Murdoch & Suter |
| <u>Cavolinia</u> <u>telemus</u> (Linnaeus). | |

4. Wharariki Deep -

| | |
|---|--|
| <u>Ranella</u> <u>olcarium</u> (Linnaeus) | <u>Alcithoe</u> <u>larochei</u> Marwick |
| <u>Alcithoe</u> <u>swainsoni</u> Marwick | <u>Alcithoe</u> <u>fusus</u> <u>fusus</u> (Quoy & Gaimard) |

This area is not trawled often.

5. Tokomaru and Tolaga Reef. -

The shells are similar from both areas. The same shells are found as above plus;

Maurea osbornei (Powell) Poirieria zelandica (Quoy & Gaimard).
Columbarium = Coluzea spiralis (A. Adams). Epitonium minera = philippinarum (Ire.).
Epitonium bucknilli Powell.

6. Ariel Reef. - Outside.

Latiaxis lischkeanus (Dunker)

Austrodiaphana maunganuica Powell.

7. Ariel Reef - Inside.

Astrea heliotropium (Martyn?)

Maurea selecta (Dell).

Globisimum drewi (Murdoch).

Mysticoncha harrisonae (Powell)

Charonia lampas capax Finlay.

Aeneator marshalli separabilis Dell.

Aeneator otagoensis Finlay

Nemocardium pulchellum (Gray).

Mesopeplum = Pallium convexum (Q. & G.)

Neilo australis Quoy & Gaimard).

Alcithoe fusus fusus (Quoy & Gaimard)

Alcithoe fusus haurakiensis Dell

Columbarium spiralis (A. Adams.)

These are just a few of the shells obtained, but of course many of the shells are found in other areas too. One area not mentioned, is the Ranfurly Bank, about 20 miles off East Cape; a large area of coral and rock which is not fished by trawlers at all, but would probably be the best area we have, for shells, as three major currents meet there.

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PRONUNCIATION OF LATIN NAMES

J. E. Rosenbaum

Reprinted from Bulletin No. 8. Auckland Museum Conchology Club.
November 1952.

The English language is a living language and thus is able to increase its vocabulary by creating new words and by assimilating foreign words. The letters of such foreign words, are sooner or later pronounced like English ones. The fact that the same letter may have different values in different languages, is overlooked or deliberately neglected. This process may be objected to by the purist, but it is unavoidable.

It must be different where the pronunciation of scientific, botanical or zoological names is concerned. These terms are part of an international language, and must be pronounced according to the rules of that language, which would otherwise lose its purpose. The majority of us may never have an opportunity to discuss matters zoological or botanical with people of other countries, but it is only right and proper to stick to the rules.

The following are the rules for the pronunciation of the letters and the stressing of syllables in Latin and latinised names. It is easy for a New Zealander to remember the proper values of the vowels; they are the same as in the transcription of Maori names.

- a is short or long as in Wāngānui.
- e is short as in Waihōkē, or long as in Rēwarewa.
- i is short or long as in pipī.
- o is long or short as in Rarētonga.
- u is short as in butcher, or long as in Yūle.
- Y is pronounced i,
- cu is pronounced as oi (in the Lambeth Walk).
- au is pronounced as in Tauranga.
- j is pronounced as y in yacht.
- th is pronounced t.

ph is pronounced f, (except where the Greek prefix 'ep' is attached to a noun beginning with an h); ep-hippium.

ch may be pronounced as k (the exact equivalent of the sound does not exist in English or Maori).

Vowels are long in open syllables, i.e. in those that end with a vowel. Thus we have cōstātūs, with a short o, long a, and short u. Where terms are made up of personal or geographical names, they are pronounced according to the rules of the language of origin, except for the latinizing suffixes; Iredalci, Poirieria (pō-a-ri-e-ria), Foveauxiana (fō-vō-i-a-nā).

The rules of stress are more complicated and narrowed by exceptions.
(a.) Normally, the stress lies on the important part of the word, not on a suffix or prefix (unless this is particularly important for the meaning). In compound words, there may be more than one stress; ðtocōncha, chāropidae, páratrōphon, quádricinctus, etc.

(b.) In words of more than two syllables, the stress lies on the last but two (except in compound words; see above), even if this syllable does not carry the sense of the word; buccinulum, but būccinum. This rule applies to those words the last but one and the last syllables of which have vowels of little sound value; pauperis, or where all syllables are closed and the vowels therefore are short; mortōnseñis. Where all vowels are long, or a short vowel among them is comparatively sonorous, all syllables carry nearly the same stress; cāudātūs, cāudātīnus, plēbējus, turbātōr, cōmīnēlla, etc.

(c.) In contrast to the English usage, unstressed syllables at the end of a word are carefully pronounced.

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P O I R I E R I A

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ACTEONIDAE IN NEW ZEALAND

SPECIES OF THE GENERA PUPA AND ACTEON.

N.W.G.

Members who frequently search the drift line of our northern beaches, will have undoubtedly collected some examples of our most common member of Acteonidae - Pupa kirki (Hutton), a small white shell with a distinctive columella fold and spiral sculpture. It is really not an uncommon mollusc and one that is readily recognisable.

Sometimes odd examples are found which sport a colour pattern - a series of dark grey, short bars arranged around the body whorl. Now and again it can be found alive, just below the surface of the sandy or somewhat gravelly areas of exposed tidal flats, but it does range into fairly deep water, to at least 100 metres or so. Specimens at that depth are small and more rotund, although the ribbing is about the same. At one time these small deep water specimens



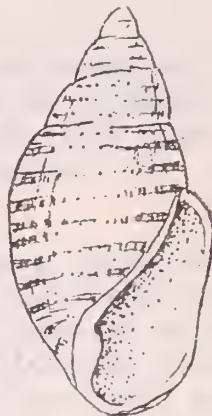
were known under the name of Pupa alba, but are now generally considered to be the same as kirki.

Our other Acteonids with a single columella fold belong to a different genus - Acteon. In the subgenus Maxacteon, the animal has a lateral extension to the headshield, and there are radular differences.

Three ~~sub-~~ species are at present recognised in this genus - all live in deeper water and are obtained during dredging operations. Empty shells rarely come ashore.

(Acteon (Maxacteon) cratericulatus Hedley 1906.

Somewhat similar to Pupa kirki, - a little more inflate with steep punctate spiral grooves, white with a purple tinge on the body whorl. It grows to 17-18mm., and bears only a single weak columella fold.

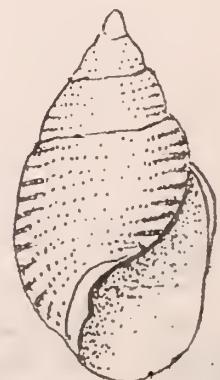


Occurs not infrequently in dredgings from Gt. Barrier Id., Hauraki Gulf and Bay of Plenty to East Cape.

Acteon (Maxacteon) hancocki (Rudman 1971)

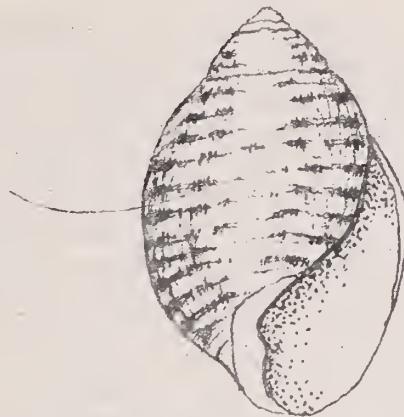
More inflated than Pupa kirki and the aperture is more open. The spire is less than half the length of the shell. Sculpture is not as strong and consists of regular spiral punctate grooves. The shell is white, with some orange-brown periostracal markings and is quite small, 6-8mm. Again, the shell has a weak columella fold and a noticeable callus in that region.

Specimens are known from the East Coast of Northland but mostly from the Bay of Islands where they occur in dredgings from around 60 metres.



Acteon (Maxacteon) milleri (Rudman) 1971

This is quite different from the other known species. The shell is white with diffuse orange-brown axial markings. It is an inflated shell with a depressed spire, less than a third of the total height.



Sculpture; widely spaced broad punctate spiral grooves. Columella with a single fold, aperture wide. Size 11mm. x 7mm. (Holotype). Most specimens have been obtained from the Bay of Islands and about Poor Knights Islands.

There are records of other deep water specimens which are referable to Maxacteon. These are apparently rather difficult to classify and could be forms of the above, or else distinct unnamed species.

Typical Acteon is a comparatively recent discovery in New Zealand. Two live specimens of the Pacific Acteon variegatus (Brug.) have been obtained in deep water off Poor Knights Islands. This shell is considerably larger than the previously mentioned species - it grows to 9mm.

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TRIP TO NORFOLK ISLAND

E.N. Gardner

Norfolk Island, lying 500km. N.E. of New Zealand, is about 8km. long by 5km in width - a lone dot in the vastness of the Pacific - or so it seems as one surveys it from the plane as it circles and comes in to land on the only suitable flat area on the Island. In order to make the runway during the last war, the unique avenue of superb old Norfolk Pines, planted over 100 years ago, had to be destroyed. One or two at the end of the row survived and serve to give visitors an appreciation of the heartache that the Islanders still feel at the sacrifice that had to be made.

Sheer cliffs almost 250 feet high, rise out of the sea which pounds in from the ocean onto a band of large, rounded, basalt boulders nearly encircling the Island.

Adjacent to Kingston, the old convict settlement, is Emily Bay, a half moon of fine white sand where a variety of small shells wash up at times. We found a colony of a small Umbonium crawling about just under the sand at dead low water and picked up a number of Bulla angasi washed up on the beach.

The area below the old convict barracks is rocky and a small reef with a lagoon inside it, runs along from the bay to the concrete landing jetty. At low tide, this is a very interesting area, where marine life thrives. A species of Aplysia was plentiful, browsing on algae, and several species of sea eggs were quite abundant out in the open or in crevices. Some were like our common Evechimus, others, very beautiful short spined red and white or pink and white; a few of the long spined Diadema and a great number of oval shaped, greenish or pinkish Echinometra. Colourful star fish were under ledges or in pools, but the commonest creature under the rocks was a small, dark brown Beche de mer, 60mm in length. Just after sunset, at low tide these all came up on top of the rocks in the pools and lagoon until the whole reef seemed to be swarming with them. A moray eel or two came out and voiced annoyance at our presence, tiny colourful fish darted about among seaweed and coral, and in one large, shallow pool numbers of the small, greenish brown Fyrne scripta were living on an algae which was much like a small carriageen. The odd specimen of Cominella norfolkensis was crawling about in the sand in pools, but most of this species were dead and inhabited by hermit crabs, as were the Lyria nucleus.

Corals, mostly Acropora and Fungia, were quite varied in such a small area. Commonest shells in the mid to low tidal rocks were Morula chaidea and Morula smithi - usually well covered in coraline growth. These both occur in Northern New Zealand, but are quite a rarity. We saw some Morula biconica with a dark purple aperture, Agnewia tritoniformis and a couple of Thais orbita among the rocks but the only Cypraea evident were two C. caputserpentis living under the ledge of a small deep hollow scoured out near the edge of the reef. Two dead specimens were also in the hole. A very fine Serpulorbis sp. was common, attached to rocks, both on top and underneath.

As this is such a small area, taking live specimens of any sort is discouraged - though a few young folk were fishing hopefully in the lagoon.

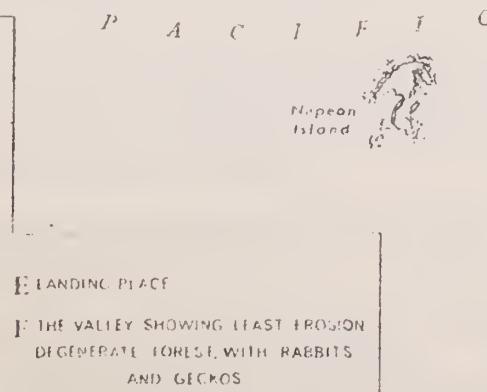
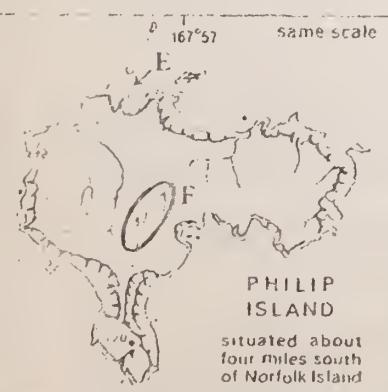
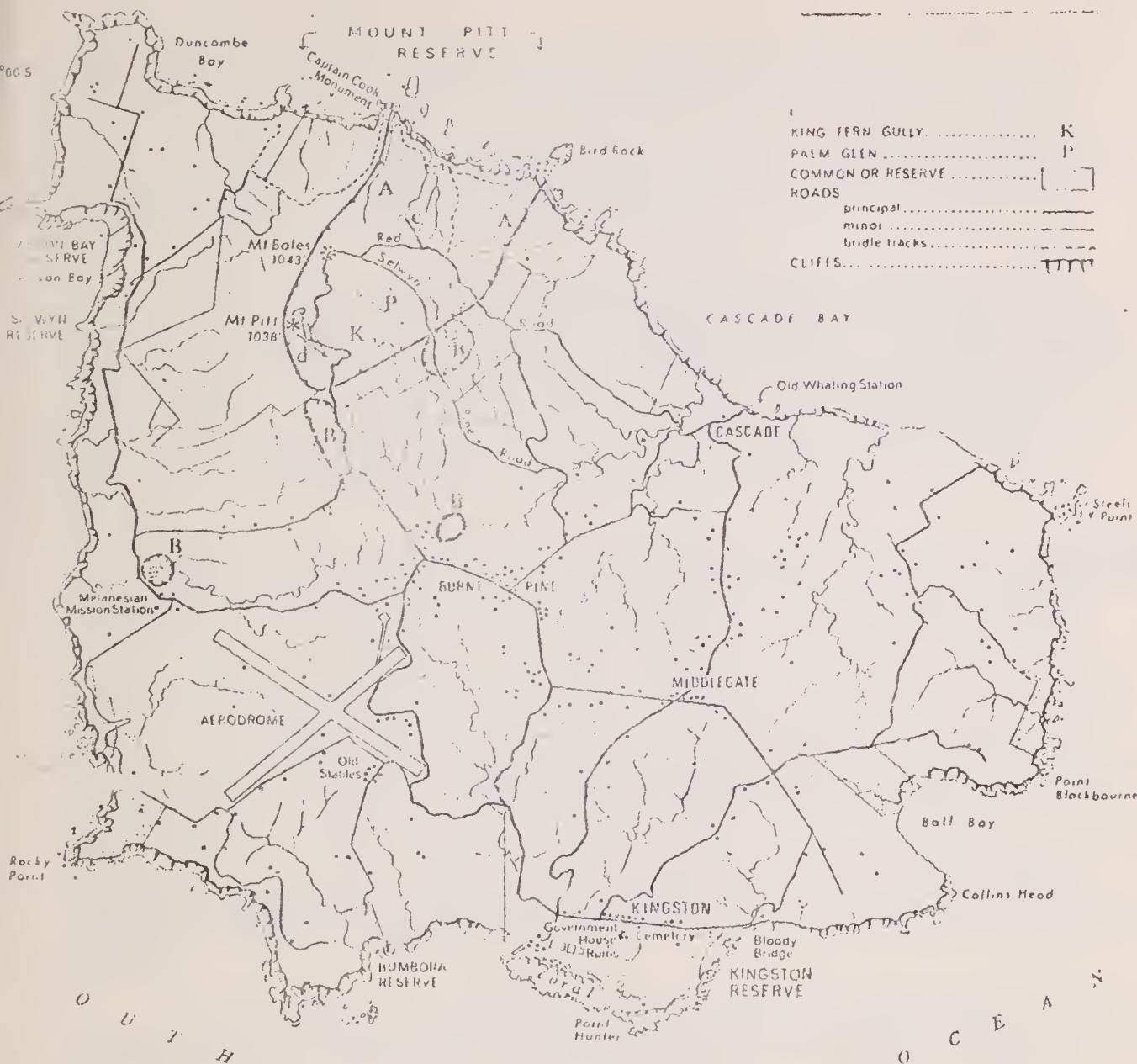
Over the headland from Emily Bay is Cometry Beach - strewn with rocks and edged with a narrow, basaltic fringing reef battered by the surf, but containing interesting shallow pools. Conus aristophanes, a form of C. coronatus, was living among seaweed and under stones, and we picked up some dead Lyria in good condition along with a newly dead Bursa granularis. Hermit crabs were in residence in a number of tiny shells and in the odd Nassa certa, Nassarius spiratus and Conus flavidus apart from the common Hinca and Nerita. In one of the few sandy patches at low tide, a colony of Nassarius spiratus was thriving but otherwise only the hardy oval shaped sea eggs, Echinometra, nestling well down in crevices in the reef, were to be seen. Hinca brasiliiana and a few crabs dominated the undersides of stones at half tide and nearer high tide level, Siphonaria normalis covered the rocks. A species of Bombicium was common.

167° 58'

100 KILOMETERS

167° 58'

NORFOLK ISLAND



along the rock joints or where there were depressions which would afford some shelter, and the inevitable Nerita melanotragus was on every rock.

Cascade, on the northern side of the Island, is a boulder strewn Bay where there is a landing and hoist built out from the shore. It was used extensively during the early settlements when the weather was unsuitable at Kingston. A whaling station was also located in this Bay.

The most noticeable thing about the boulders here and elsewhere on Norfolk Island, is the vast number of Nerita melanotragus clinging to the rocks as the tide falls, - rarely a specimen of N. plicata stands out among the black melanotragus. There are no true limpets, oddly enough, but Siphonaria normalis is very common and in many cases covers the stones near high tide to the exclusion of anything else. The species is not very big - about 20mm. in diameter. The most mature specimens seemed to be nearer high tide mark, especially on the wall of the landing area which is covered with this mollusc, in all stages of growth.

In amongst the smaller stones were hundreds and thousands of Hinea brasiliensis. If a stone was lifted out from the pile, the shells would drop off from underneath in handfuls - and to think of the excitement caused several years ago, when a couple of small colonies of this species were found living at Cape Karekare and near Mangonui in New Zealand ! It was fun just to lift some of the clean, smooth rocks and see the myriads of this species, young and old, under each rock. Most of the juvenile shells had the yellowish periostracum intact on the body whorl, but many older ones had been rubbed clean and white. A few purple, mottled crabs like our N.Z. Leptograpsus variegatus, scuttled off at our approach, but otherwise the area was poor in variety of shore life. A glance along the boulder strewn shore area - about a chain in width - with the realisation that this stretched around a circumference of 30km. or so, made the mind boggle at the thought of the number of Hinea there must be on the Norfolk Island platform. Nerita melanotragus and Siphonaria normalis are in their thousands, but those Hinea ! They must find it a place very much to their liking - Sturdy molluscs indeed !

A fishing party came in after a couple of hours of line fishing a short distance offshore and unloaded five large plastic tubs full of trumpeter, cod, smallish kingfish, trevalli and a type of gurnard.

Bambora Reserve, on the South coast, is a pleasant spot with a small beach where "shells come in", we were told. Sure enough ! but when we were there, we saw only the remains of hundreds and thousands of Nerita melanotragus and Hinea in drifts along the tide lines.

Anson Bay, reached by a Zigzag path down the cliff, has a small beach where turtles come ashore to lay their eggs. Shells also come in here at times.

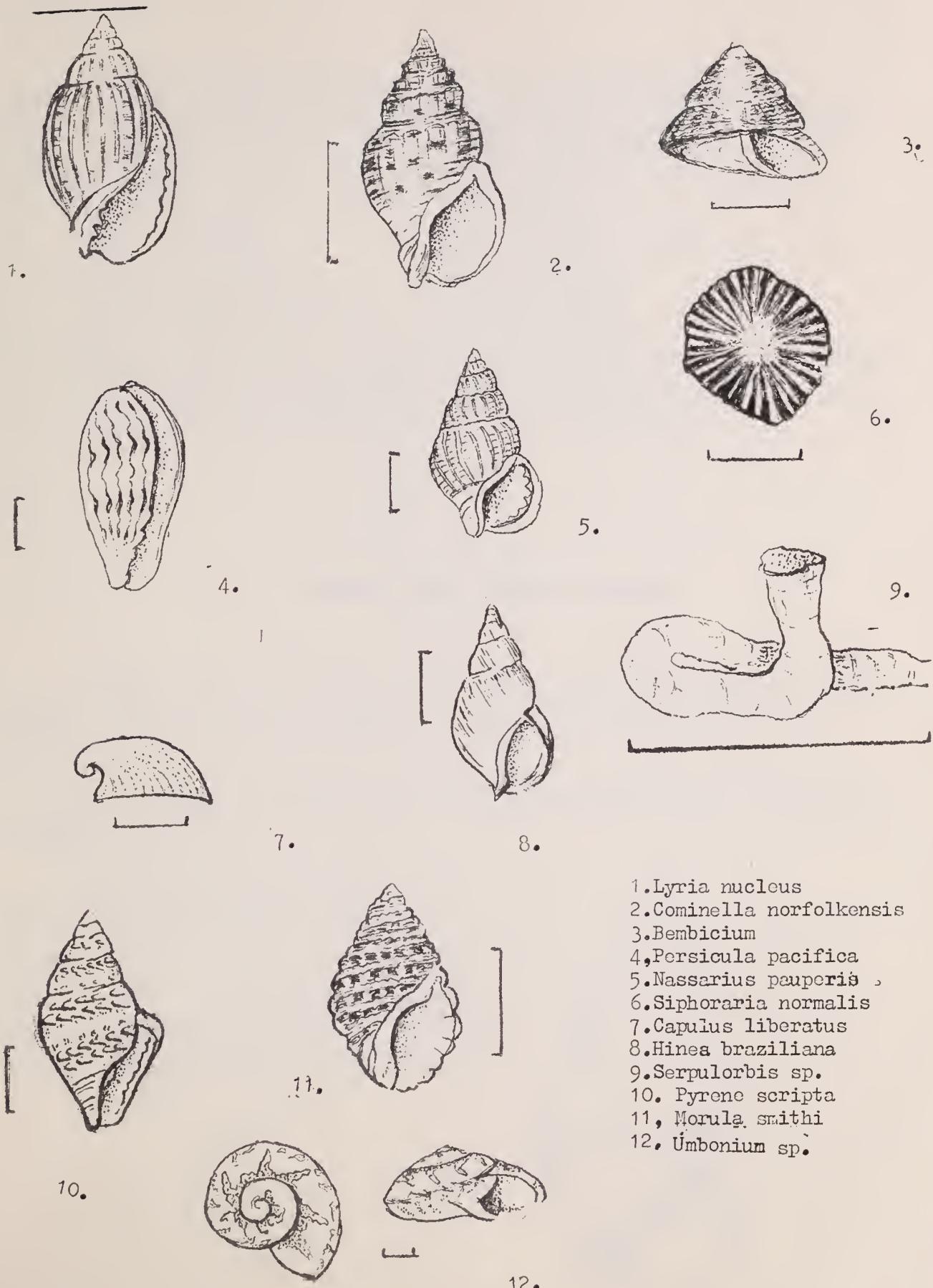
The only good stands of native bush remaining on the Island are on the slopes of Mt. Pitt and the adjoining Mt. Bates. The bush at first glance seems much like ours in the Waitakeres and many Northland areas - Kawakawa, Punga, a cabbage tree etc. along with ferns and Nikau palms with piles of fallen fronds,

afford shelter for small land snails. There were at least 50 specimens of about six species in many fronds. One or two species, particularly the glassy Microcystis, occurred in groups of six or more, but the most interesting thing to me, was the presence of a brown, slightly furry looking Succinea, living in the security of the fallen Nikau fronds. Our own species, Succinea archeyi, as we know, lives on a dark green algae which thrives during winter months about the roots of Spinifex and under Cassinia and Muehlenbeckia, out on the sand dunes in northern parts of New Zealand. (Laurie Price made a trip to Norfolk Id. to do field work on the Land snails in 1969 and wrote an account of the trip in Poirieria, Vol. 5 part 2, pp 36-38.)

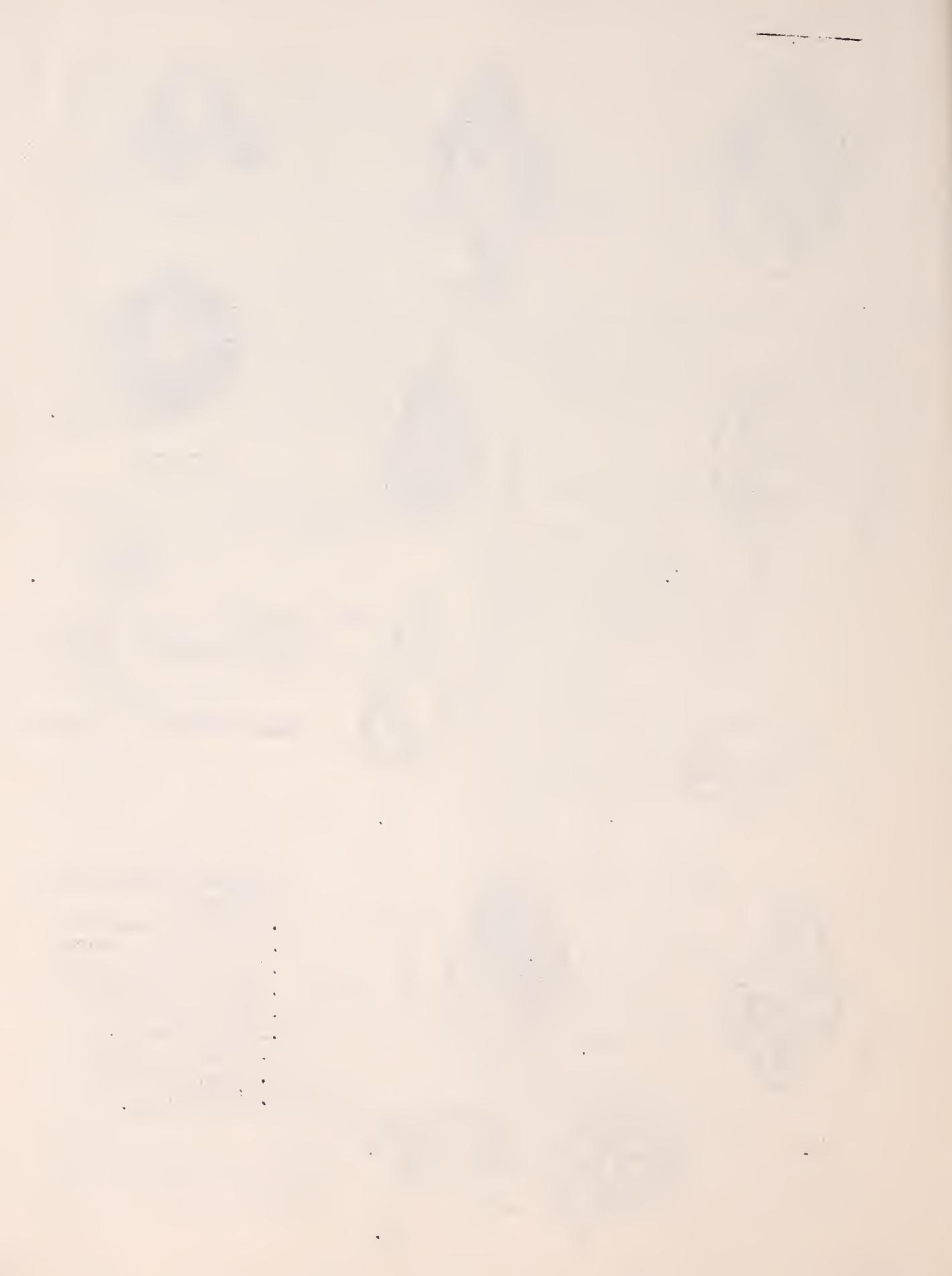
Land snails collected by J. Macgillivray 1855, and deposited in the British Museum, were recorded by Sykes - 25 species. Roy Bell made extensive collections of both land and marine molluscs on Norfolk Island. He obtained 40 species of snails on the main island and 5 or 6 sub-fossil species were also recorded. These were all worked out by H.B. Preston. T. Iredale has written numerous papers dealing with Roy Bell's collections, but the papers are scattered and the literature is not always readily available.

The following Marine species were collected or noted by J. Coles and E.N. Gardner between 1st. and 9th. December 1978. Species marked with an asterisk occur also in New Zealand.

| | |
|--------------------------------------|-------------------------------|
| Stomatella auricula (Lamarck) | Thais tuberosa Roeding |
| Puncturella sp. | Pyrrene flava (Brug.) |
| Herpetopoma sp. | Cominella norfolkensis |
| Umbonium sp. | Nassarius grandiosus (Hinds) |
| Nerita melanotragus (E.A. Smith), | Nassarius paupaeus (Gould) |
| Nerita plicata Linnaeus. | Nassarius Spiratus (A. Adams) |
| Bembicium sp. cf. melanostoma | Lyria nucleus |
| Merelina sp. | Persicula pacifica (Pease) |
| Serpulorbis sp. | Conus aristophanes |
| x Hinea brasiliensis (Lmk) | Conus parvulus (Link) |
| Eulima sp. | Conus miliaris Hwass |
| Hipponyx conicus | Conus flavidus Lamarck |
| Hipponyx foliaceous | Epitonium sp., Epitonium sp. |
| x Capulus liberatus (Pease) | Triphora sp. |
| Cypraea moneta L. | x Bullina lineata (Gray) |
| Cypraea caputserpentis L. | Aplustrum amplustra (L.) |
| Natica gualtieriana | Bulla punctulata A. Adams |
| x Polinices (Deshayes) | x Bulla vernicosa Gould |
| x Agnewia tritoniformis (Blainville) | Aplysia sp. |
| Bursa granularis Roeding | Umbraculum sinicum (Gmelin) ? |
| Bursa sp. | Siphonaria normalis |
| x Pterothyphis angasi (Crosse) | Septifer vertagus |
| Drupa maorum Roeding | Modiolus sp. |
| Morula spinosa H. & A. Adams. | x Acar sandersonae Powell ? |
| Morula uva Roeding | Lima sp. |
| x Morula chaidaea (Dulcos) | Tellina c/f vergata (L.) |
| Morula biconica Blainville | x Spirula spirula (L.) |
| x Morula (Neothais) smithi (Brazier) | Strombus mutabilis Swainson |
| Mitrella sp. | Drilla sp. |
| Columbella sp. | small chiton. |
| Pyrene scripta (Lamarck) | |



1. *Lyria nucleus*
2. *Cominella norfolkensis*
3. *Bembicium*
4. *Persicula pacifica*
5. *Nassarius pauperis*
6. *Siphoraria normalis*
7. *Capulus liberatus*
8. *Hinea brasiliiana*
9. *Serpulorbis* sp.
10. *Pyrene scripta*
11. *Morula smithi*
12. *Umbonium* sp.



Unfortunately, while we were on Norfolk Id. we were not able to see a collection made by any of the local residents, but from photographs taken of Mrs. Stanton's collection, by our member Mrs. F. Bunce, the following were noted;

| | |
|---------------------------------|-----------------------------------|
| <i>Siliquaria ponderosa</i> , | <i>Tonna cerevicina</i> Hedley |
| <i>Umbraculum</i> | <i>Strombus luhuanus</i> Linnaeus |
| <i>Conus moneta</i> | <i>Conus ebraeus</i> |
| <i>Cypraea asellus</i> | <i>Cypraea figulinus</i> |
| <i>Cypraea vitellus</i> | <i>Cypraea arabica</i> Juvenlie |
| <i>x Janthina violacea</i> | <i>Morula granulata</i> |
| <i>Natica onca</i> Roeding | <i>Cantharus undosus</i> |
| <i>Natica gualtierii</i> Récluz | <i>Melina ephippium</i> |
| <i>Barbatia c/f velata</i> | <i>Pinctada maculata</i> |

Extensive work is at present being done at the Australian Museum, Sydney, on the Marine and Land Mollusca of Norfolk Island, and I am sure it will prove to be of great interest to many Conchologists, particularly to any who have had the opportunity to visit this lovely spot,

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RISSOINA FROM NORTHERN BEACHES

N.W.G.

At least five species of these tall spired rissoids can be found alive on the underside of low tidal rocks, or in sand drifts on some of our northern beaches. There are quite a number of deep water species, too, but it is most unlikely that they would wash up onto the shore.

Rissoids, as a whole, can be rather difficult to identify, but the species of Rissoina with their tall spires, round apertures with the shallow basal dent, are readily recognisable.

The largest, Rissoina zonata, grows up to 12 x 5 mm., which is twice the size of most other species. As a rule the shell is white and without distinctive sculpture; sometimes there is a brown zone encircling the body whorl. It is found occasionally living under rocks at low tide in localities from the far north down to East Cape. Odd specimens have turned up further south.



Rissoina chathamensis Finlay

A widespread and very common little shell, found throughout New Zealand, though in the north, it is probably not quite as numerous as elsewhere. Usually, the shell is white, but there may be colour on the whorls - pale pink to a pale purple. It has a series of rather straight, raised axial riblets around the body whorl. Size; 7.5mm x 3 mm.



Rissoina anguina Finlay

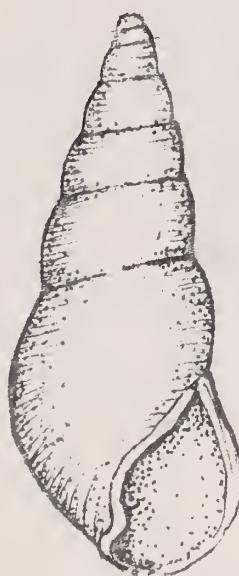
Another very common species - especially so, in Northland but not found in the South Island, as far as I know. This is an easy one to pick out, if you do not let the various colour patterns disturb you.

The shell is small, not quite the size of R. chathamensis, smooth - without the raised axials. Colour patterns are varied, - spiral bands narrow or wide, in various shades of brown; interrupted oblique blotches or plain white, cream or brown. Size, 5.5 mm x 2.5 mm.



Rissoina achatina Odhner

A little larger than the previous species, with a slightly more rounded body whorl. Most specimens are a plain creamy colour. Sculpture is of close, shallow spirals. Not a common species by any means, but odd examples can be sorted out from shell-sand drifts on some of our northern beaches. Size 5 mm x 2 mm.



Rissoina laevigata Finlay

Can also be sorted out of shell sand accumulations in the North. This is a comparatively small species with strong, curved, oblique axial ribs -10 per whorl.

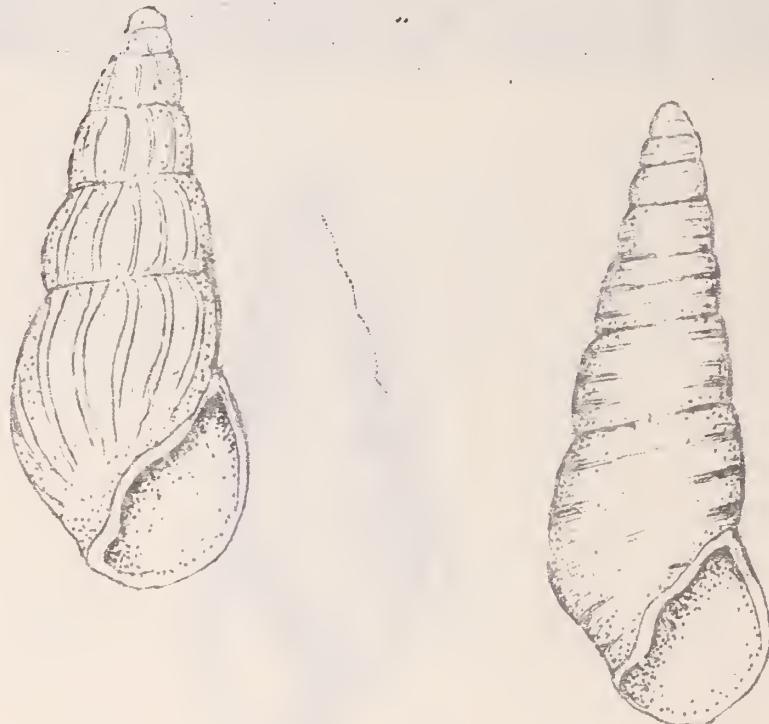
The surface appears smooth, but in reality, has microscopic spirals, whitish in colour.

Not common, but can be found in shell sand from Spirits Bay. Size, 2.9mm x 1.3mm.

These are the five species likely to be obtained from around our shore line. Two other species, however, do occur in fairly shallow water, and they could, on occasions, find their way ashore.



They are, R. fuscosa Finlay, which is like larochei, but is larger and heavier), and R. ficta Finlay, tall and rather straight sided; smooth, but with finely lined whorls.



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AROUND THE COLLECTIONS

Alex and Dulcie Thomson's Collection

D. Lamb

Mrs. Thomson joined the Conchology Section in 1959 and has been a regular attender since then. Alex saw the light fairly quickly and decided that the old adage 'if you can't beat them join 'em', was good advice. They have collected throughout Australia and have a very strong section of shells from Western Australia. Mrs. Thomson's only chance to collect in Fiji was thwarted by being 'lost' on the reef during a rain squall!

Mrs. Thomson has exchanged shells world-wide and agrees that she has been extremely fortunate with the collectors she has contacted. This is more than borne out by the collection. If one wished to describe the collection in one word, that word would be 'Quality'. It has been built up on the very personal basis of what the Thomson's like, and everything in the collection is superb. There are few of the commoner species but where they appear, they are very fine specimens. The collection's strength is a general one - the 'goodies' and scarce items seem to outweigh the ordinary and commoner

shells. Western Australia is well represented and so is the Cone family.
(Mrs.J.Wyatt bequeathed her collection of Cones to Mrs.Thomson.)

The Thomson's have a good library with the usual guides and handbooks and they also subscribe to the Hawaiian and West Australian Club magazines. Mrs.Thomson has recently commenced cataloguing the collection, so the recent bad weather may have been a blessing in disguise!

Because of the number of really good shells, it is only by a conscious effort that this report avoids being a simple list of shell names. Nevertheless, one MUST mention a few - so what about Pleurotomaria hirasei, (with operculum, of course). Conus prometheus (w/o) from Rio Muni, C. fulmen, C. nobilis, C. ranuncula from Netherland Antilles, C. augur from Madagascar as it was, C. striatellus, C. adamsonii - a bleached but very nice specimen indeed, Vasum muricatum and lots and lots of lovely Murex. Rio Muni, by the way, seems to have a most interesting selection of shells and Mrs.Thomson's contact there sure knows what to pick up.

Among the not-so-rare were beautiful specimens of Japanese Cuspidaria, a huge Livonia pica, Notoseila crocata, an orange Tur (the name of which escapes me), Astrea rugosa, Pecten nobilis, a Turbo miliaris with spines and an Olive annulata (forma intricata). All these are shells which would attract attention in any collection and the afternoon's viewing passed all too quickly.

- 000 -

ITEMS OF INTEREST

HOW is THIS
for SIZE ?

CELLANA
DENTICULATA
FOUND AT
ATIA POINT;
KAIKOURA
By MRS SHIRLEY RENNIE
OF RANGIORA.

NOVEMBER 1978

84 X 70 MM.

From Richard Willan;

On the 6th of June, a gentle southerly wind permitted me to do a SCUBA dive off "Phenix Reef" on the northern side of Takatu Peninsula (the Auckland Regional Authority's Tawharanui Reserve).

Normally, the whole northern side of the Peninsula is impossible to dive because of its exposed position. However, it was fortuitous, because I encountered great numbers of very small horse mussels (Atrina pectinata zelandica in 5 - 8 metres of water. All were nearly the same size, the range in shell lengths being from 26 to 33mm.

Close to the reef, thousands of already-dead shells were wafting to and fro on sandy patches with the surges. Many were broken, and this, combined with their translucent appearance reminded me of so many glass splinters on a road following an automobile accident. Further out many more were alive. Singly or in clumps, I found them attached by whisps of byssus in tiny sandy hollows and beneath every stone on a substrate of almost complete rock. The shells of these little Atrina were so transparent it was easy to see the organs of their bodies through the valves, themselves - even the separate plications of the gills could be distinguished. Undoubtedly, these would die too, because of the lack of fine, undisturbed sand for burrowing into and because of the openness of this piece of coast. No adults were seen at all, and indeed I would never have expected to see them here.

On the second dive of the day at Home Bay, facing the South, and considerably more sheltered, good numbers of large, adult Atrina pectinata zelandica were found many well-laden with epiphytes but there were no tiny juveniles there.

Such great numbers of juveniles, all of the same size suggests that all were spawned together. Presumably the larvae were all carried to "Phoenix Reef" together, settled there, and were able to grow up to this size at least. This observation gives an indication of the thousands of tiny animals belonging to organisms with pelagic larvae that must die daily when, by chance, they are carried by some current into an inhospitable area.

- oOo -

Mrs. P. Mayhill writes, "Recently, when walking up Mt. Maungakawa, we chanced on some *Macrocarpa* trees in a grassy patch, halfway up the road, with secondary growth native trees nearby. On the bark and around the base of one very large *Macrocarpa*, we found a number of snails, both native and introduced;

Flammulina perdita (Hutton)
Charopa pseudanguicola
Charopa c/f pilsbry (Suter)
Laoma cheesemani Suter
Paralaoma rericostata (Suter)

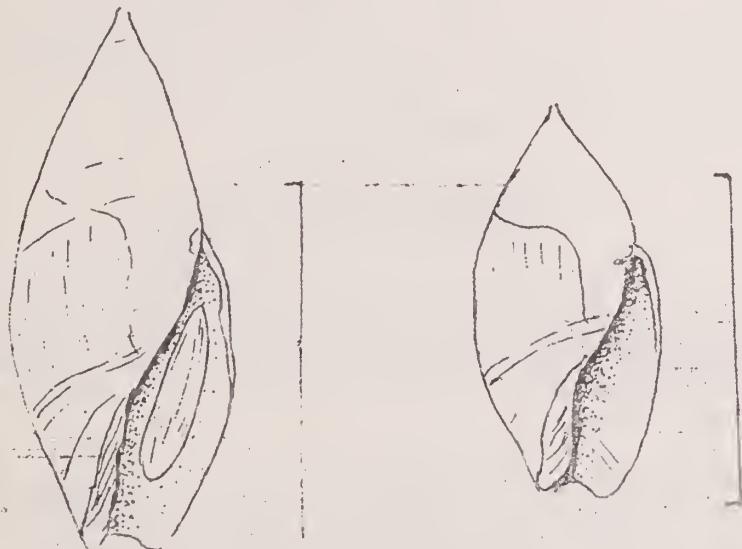
Phenacohelix pilula (Reeve)
Cochlicopa lubrica
Vertigo pygmaea
Oxychilus cellarius
Lamellidea (Tornatellinops) novoseelandica (Pf)

VARIATION IN AMALDA MUCRONATA (SBY.)

N.W.G.

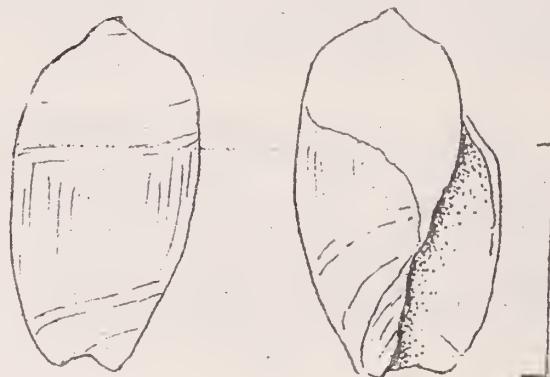
Nearly all gastropod shells have a tendency to vary in shape at times-sometimes taller or wider than they should be, or they may even be the "wrong" colour. Then too, apart from these odd ones which occur at random, there are areas which seem to produce a series of wayward forms.

One species that comes to mind, is Amalda mucronata (Sowerby),- the ginger olive shell which lives just below low-tide on sandy substrate around our northern beaches,- out of reach of most collectors except after storms. However, the odd live specimen has been found at low-tide level, though only rarely. Subtidally, it is apparently quite common, and a mollusc with a considerable benthic range, for specimens have been taken in prawn trawls as deep as 500 metres. These are tall and slender, with little of the usual callus around the aperture and spire, associated with this species.



Some years ago, when the mussel boats were operating in the Firth of Thames, one of the molluscs which frequently came into the wharf amongst the

debris on docks was Amalda mucronata, All these seemed to be short-spiral grossly mucronata, pale in colour and of no great size - usually about 30 mm. and really quite distinctive.



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RHYTIDA FORSYTHI POWELL.

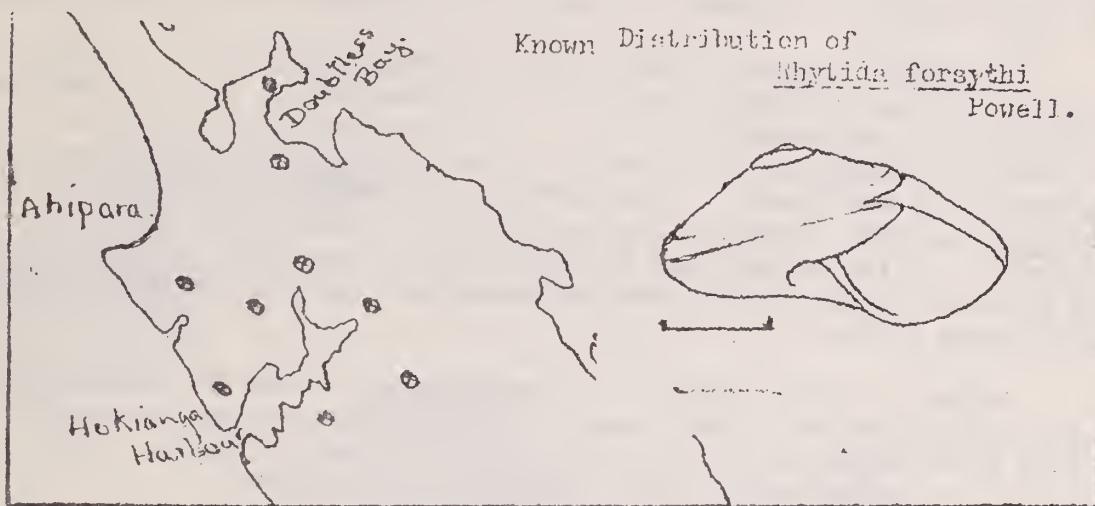
N.W. Gardner

To me, Rhytida forsythi Powell has always been an interesting and intriguing species, occupying in Northland, a rather small territory which, as yet, has not been fully mapped.

This is a small species, about half the size of R. dunniae (Gray), but not as distinctly keeled at the periphery and with a more rounded outline. Adult specimens grow to 12 - 14 mm. and are quite readily recognisable. The two species seem to have a rather haphazard distribution - generally where one occurs, the other does not, but there are several places where the two occur together. For this reason, it would seem that it has every claim to be recognised as a full species, although it has been listed as a subspecies of dunniae.

One wonders, if perhaps, it is a derivative of the northern block R. duplicata Suter, which it resembles more in size and shape (having indications of a secondary keel above the peripheral one) or if it has originated on that previously isolated high country at the end of the Rangiawhia Peninsula, eventually spreading onto the mainland and thence inland.

Rhytida forsythi still occurs in the bush remnants at the end of the peninsula. It has been recorded from about Taipa, the summit of Mangamuka, Broadwood, Owhata, Herekino, Moerewa, Okaihau and Waipoua forest.



Actually, several species of our smaller land snails seem to be restricted entirely to this same land-area; their evolution perhaps due to some period of isolation from the rest of Northland in past Geological times.



NEW HEBRIDES TRIP -1976

Doug. Snook.

On Wednesday, 21st of July, ten of our members left Mangere Air Port at 11.55 a.m. for an overnight stop at New Caledonia, our first hop. We were, Richard Willan, Derrick Crosby, Joan Coles, Joan Willan, Stan and Peggy Town, Rae Stanton, Rene Kindleysides, Damaris Hole and Myself. We left behind cold and showery weather, and arrived in a warm drizzle after a three hour flight.

Our first night was spent at the very nice hotel 'Isle de France' in Noumea and that evening we made a visit to Mrs Pierson, to see her fantastic shell collection, in her beautiful home. The next morning, we went for a shell hunt on Anse Vata Beach, and made a visit to the Sea Aquarium, all within walking distance from the hotel. That afternoon, we left for Vila in a U.T.A. friendship plane - a one hour flight, and arrived about 4 p.m., to find very dull, cloudy weather. A lot of rain had fallen, but before tea some of us had a quick hunt for land snails, and several species, including the large introduced Achatina fulica, were found.

During our time in Vila we stayed at hotel 'Solaïse' about 10 minutes' walk from the centre of the town. The next day we were transported by mini bus to Black Sands Beach and reef, where collecting was good. The shell of the day for me was, Lambis lambis - several live specimens.

Saturday arrived bringing with it a beautiful hot day, ideal for our launch trip on the 'Escapade' to Pango Point, where we discovered an interesting reef area with some small bays. I found a live Mitra mitra and a specimen of the Turrid, Inquisitor with a hermit crab, and also a good variety of smaller shells; a most enjoyable day.

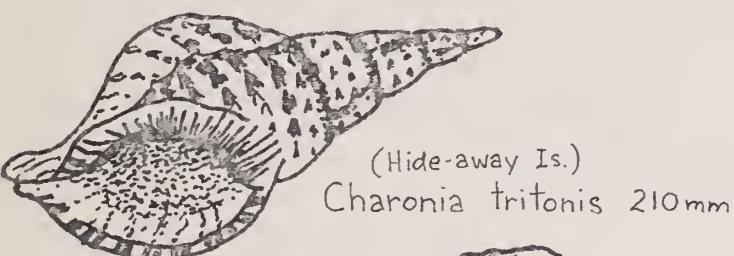
On Sunday, most of us went to the Port Vila Presbyterian Church where we found a large crowd of New Hebrideans in casual dress, meeting for worship. The men all sat on one side of the church, the womenfolk on the other, with pigeon English being the major language spoken. - truly an interesting experience. In the afternoon, a short trip was made to La Laggon, where snorkel and flippers were popular to inspect the coral in the calm water. Derrick found a very beautiful Casmaria, here. My most interesting find was a sea egg.

Monday turned out another beautiful day. As the shops open early, and close for a period in the middle day, I did some shopping before our trip to Tourist Pango. Here, we obtained permission from the village chief to go to one of his private beaches and reef, a delightful spot and an excellent place to hunt. Here we saw an example of the exquisite nudibranch, Spanish Dancer. My best finds to-day included two live Mitra stictica and a freshly dead Cypraea argus. We also bought some shells in the village.

The next day, we had our longest trip when we drove completely around the island of Efate. The highlight of the day was our visit to Siviri Village, on the north coast. The teacher had lost an uncle, and as is the custom, the relatives meet five days following the death, hold a feast and discuss the allocation of the property. Preparations were being made the day we called in to the village. The teacher, who spoke good English, was able to answer all our many and varied questions. He also showed us, with skill, how to pick and

NEW HEBRIDES

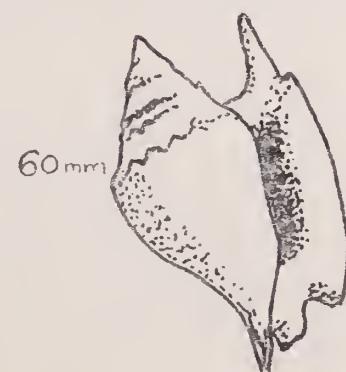
Shell Club Trip 1976
A few of the shells collected
are sketched here —



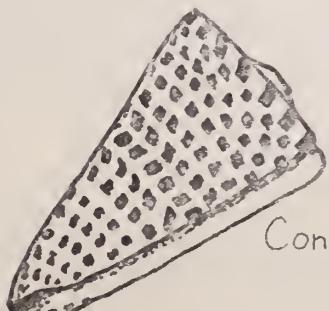
(Tourist Pango)
Cypraea argus



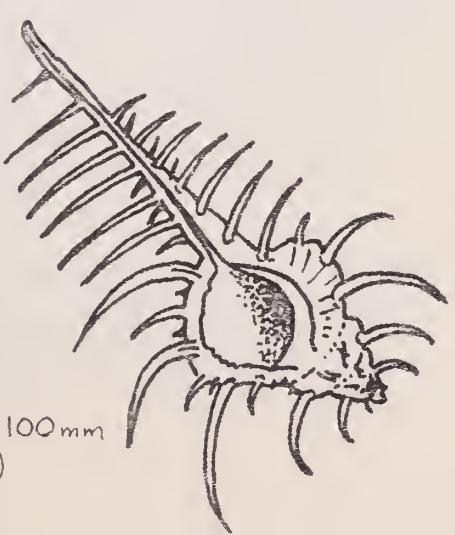
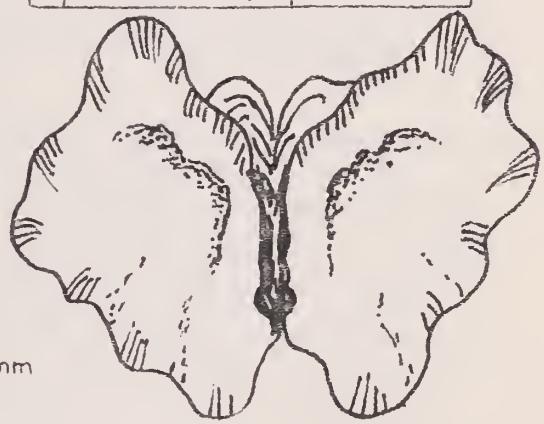
Pleuroplaca trapezium 120mm



(Tutuba Is.)
Strumbus hulla



Conus litteratus 68mm



open a coconut. We took many photographs and then had a good shell hunt off their village beach. Derrick and Richard found Conus tulipa -one of the more poisonous species and Joan Willan, a Conus retifer. There were numerous Cones, Cowries, Lambis and Mitras with hermit crabs. I scored a very nice, large Tutufa bubo and found several shells for the first time; a Pleuroploca filamentosa, a Vexillum rugosum and a Conus striatus. The children in the village were shy but friendly and came to help with collecting and sang for us. We also bought some shells.

Early Wednesday morning, at about 3.30 a.m., many of us were woken by a strong earth tremor-news of which even reached New Zealand. Apparently, earthquakes here are of reasonably common occurrence, and happen without much local attention or damage. Our trip to-day, was to Mele Bay and later to Hide-away Island. At Mele Bay there were some lovely little washup shells. I found a juvenile Nautilus macromphalus about 30mm. Joan Coles' choice find was a Conus nimbosus. Hide-away Island has a large reef surrounding it, where we experienced good hunting. Beautiful native style accomodation is available in a lovely setting. My find of the trip was here, -about mid tide, in a rock pool, a lovely Charonia tritonis. Joan Coles picked up a Conus imperialis and Derrick, a Conus geographus.

Next day some of our group took a trip to the south coast, which was exposed and rocky. On the exposed platform was the orange mouthed Drupa grossularia and Vasum ceramicum - large specimens.

Early on Friday, we set off to Havannah Harbour, to travel by launch 'Escapade' to Moso Island, on another glorious day. From all appearances, the island was not inhabited, at least, where we landed - no sign of footprints or human litter, a tremendous experience. Richard and Derrick went diving offshore. Hunting was good, with a number of Cones and Cowries being found. My find of the day was a pair of Hippopus hippopus that had been washed up, probably in a cyclone, and was almost buried in the sand. The return trip by launch, was delightful, in the clear warm evening. Returning through Vila, we saw much activity due to the visit of the tourist ship Acadia. and the streets were full of gayly clad people in a summer like scene.

A very early start on Saturday for Stan and me for the flight to Santo - The rest of our group followed later. We were greeted by a group of New Hebrideans in their native dress. They were there to meet a visiting Catholic priest who had travelled up with us on our 9 seater plane. We were then driven to Hotel Santo in the main street of Luganville. It was a market day with many stalls set up along the sides of the road. Most of the shops here were general stores, many operated by the Chinese - a few stocked shells. In one such shop I found a very nice example of a Murex pecten, with a good number to select from, probably imported from the Philippines.

It was a glorious day on Sunday when we drove ourselves in the hotel mini-bus north to Hog Harbour, and then to Champaign Beach. We had a swim in the beautiful clear water. The sand on the beach was white and clean, with the palm trees fringing the whole place, - a truly delightful spot for lunch to-day. The shell collecting was poor, but it did not seem to matter as everything else was great.

Next morning, ther was a genile drizzle. Today, we decided to go south-west to the end of the road, where we saw many outriggers lying on the beach. Across a small stretch of water was Tangoa Island and the Presbyterian Mission village. On the return trip we stopped at a beach where we found mainly small shells, many inhabited by hermit crabs. Rae picked up a Lambis truncata.

The following day we journeyed to a spot North east, called Surunda, where, after we had had lunch, we discovered a very large platform of reef, sand and stone once the tide receded. Shell hunting here was most rewarding. I found my first Pleuroplaca trapeseum, some Strombus canarium an albino form, a Vexillum rugosum, some Rhinoclavis vertagus and some Strombus gibberulus to name a few. Some live Olives were also found.

Today, Wednesday, we went by boat across to Tutuba Island, about one hour's run across the harbour. Her our hunting was mostly confined to small wash up shells on the beaches. The low tide was getting much later in the day, and not receding as low, so our reef hunting was more difficult. While we were on this island, a tropical downpour caught some of our party unawares; some took shelter in the village, but the others looked like ship wrecked survivors as they made their way back to join the rest. Fortunately the temperature was rather mild. On the return trip, the skipper gave each one of us a piece of lovely red coral from deep water. My best find to-day was a fine example of Strombus bulla, washed up, freshly dead. A good number of small cowries, different ones, were also picked up.

No trip was planned next day, as time was needed to clean, pack and do some final shopping, as well as have a hunt on the beach and tidal platform, just over the road from our hotel. By the way, our hotel was a two storied building, only about two years old with air conditioned rooms and all facilities. As most food was imported, the menu was limited, but service was good. Derrick and Richard went for a dive early in the morning, over the President Coleridge, sunk just offshore during the war. Richard was very interested in the marine growth and Nudibranchs and was able to photograph them.

We awoke to heavy rain falling on our final day. This delayed our plane nearly two hours and when we arrived back at Vila, our connecting was waiting. Almost before we could turn around, we were being whisked up in an Air Nauru 737 jet, off to Noumea. On arrival there we were greeted with a glorious day, and immediately taken to the terminal restaurant for a very nice luncheon. Being passengers in transit, we had a few hours to spend, mostly reading while we waited for our final flight back home to N.Z., after what had been a wonderful experience with a great group of people. Some had even wondered whether we would be allowed to return with all our extra cases, cartons, buckets etc. full of -guess what! Shells. Once home, we had the huge task of identification, completion of cleaning and sorting them all - a big job but an enjoyable one. I then discovered that I had nearly 400 different species, collected on our trip. This was more than I have in my entire New Zealand collection, giving one the realisation of the richness of the region we visited, for marine life.

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RECENT PUBLICATIONS

Habitat and relationships of Iphitella neozelanica (Dell)
(Gastropoda ; Epitoniidae)

A.G.Bou

N.Z. Zealand Geological Survey, DSIR, Lower Hutt, New Zealand
N.Z. Journal of Marine & Freshwater Research 12 (4): 391-6

Abstract

Sculptifer Beu & Climo, 1974 is synonymised with Iphitella Thiele, 1925 (= Iphitus Jeffreys, 1883, non Rafinesque, 1915). The single species referred to Sculptifer, Stilififer neozelanicus Dell, 1956, closely resembles the only other two valid species of Iphitella, the bathyal North Atlantic I. tuberata (Jeffreys, 1883) and I. cancellata (Dautzenberg & Fischer, 1896). The protoconchs of all these species, are closely similar to those of Nystiella Clench & Turner, 1952 and Eccliscogyna Dall, 1892, and Iphitella is placed in Family Epitoniidae, Subfamily Nystiellinae.

Iphitella neozelanica lives deep inside calyces of the branching ahermatypic coral Goniocorella dumosa (Alcock, 1902).

Bathyal Nukumaruan Mollusca from Oaro, Southern Marlborough,

New Zealand

A.G.Bou

N.Z. Geological Survey, DSIR,
Lower Hutt, New Zealand.

N.Z. Journal of Geology and Geophysics Vol. 22, No. 1 (1979); 87-103.

Abstract

More than 100 species of molluscs are listed from Nukumaruan (late pliocene or early pleistocene) siltstone on the summit of the first hill south of Oaro, Hündaloo Hills, southern Marlborough. Most species are part of the living bathyal molluscan fauna of canyons off eastern South Island, and the siltstone evidently was deposited in 600-800m of water. Falsilunatia, Penion benthicolus Dell, P. fairfieldae (Powell), Cominella (Eucominia) albertae (Dell), C. mirabilis cantuaricensis (Dell), Euthrenopsis otagoensis Powell, and Volutomitra (Latiromitra) are reported as fossils for the first time. The fauna is dominated by the buccinids Cominella nassoides otakauica Powell, an abundant living taxon, and Ancorator (Acneator) elegans (Suter), a species only recently recognised in the living fauna. The locality is probably the type locality of Ancorator elegans and of Falsilunatia ambigua (Suter), the latter an earlier name for the living F. powelli Dell. New species of Macquinella (Simuginella), Paracomitas (Macrosinus), Splendrilla (two), and Neoguraleus (Fusiguraleus) are named. Splendrilla armata Powell, S. kingmai Marwick, S. majorina n.sp., S. zeobliqua n.sp., and Paracomitas (Macrosinus) haumuria n.sp. are recorded living off eastern South Island.

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CONCHOLOGY SECTION
AUCKLAND INSTITUTE & MUSEUM

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Vol. 10.

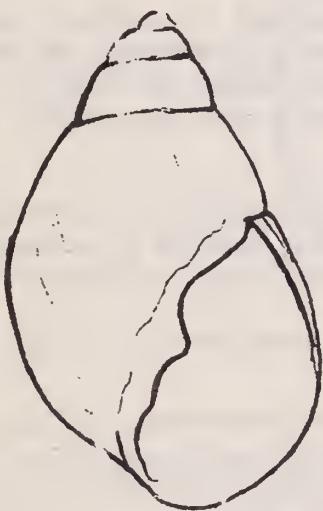
Part 4.

December 1979

LEUCONOPSIS OBSOLETA (Hutton, 1878) FROM A LOW TIDAL HABITAT.

Hamish Spencer

Many members will have collected species of the pulmonate family Ellobiidae from high tidal situations, under large stones resting in mud such as at Rangitoto, under large piles of rocks as at Maori Bay, Muriwai, or amongst rushes as in the Waiwera Estuary. Leuconopsis obsoleta is one of the smallest members of this family with an off-white animal with black tipped tentacles. I have found it on Rangitoto Id. and it also occurs around the edges of high-tidal pools.



1 mm.

Leuconopsis obsoleta (Hutton)

Little Hat Island,
Whangarei Heads,
26 - 5 - 79.

During May 1979, Prof. J. E. Morton and I observed L. obsoleta at low tide on Little Hat Island, Taurikura, Whangarei Hds., (see Morton & Miller, p. 47). Large numbers of this gastropod were crawling about in shade, over the brittle lamellae and scrolls of the black cheilostomatous polyzoan (sea mat) Dakaria suboroidea (= Watersipora cucullata) growing on vertical and

overhanging rock. Subsequent searching showed that Leuconopsis was also living upon Dakaria under low tidal boulders. The specimens do not differ from those at Rangitoto, except that the shell is less yellow-stained, evidently from the absence of light - coloured mud,

It is interesting to note that Dakaria is a recent immigrant to New Zealand, arriving in Auckland about 1957, probably via shipping, while on the other hand, L. obsoleta is endemic to New Zealand. It would seem to have taken little time for Leuconopsis to have formed a strong preference for Dakaria, as it was not found on any of the neighbouring polyzoans, algae or rock.

Several questions arise from this discovery. Ellobiids are air-breathing pulmonates, leading to the query, 'What is Leuconopsis doing at low tide?' There is no operculum that might serve to retain air in the mantle cavity. The pulmonary chamber, however, opens only by a restricted pneumostome, which might allow a bubble of air to be retained in its relatively ample space, during the high tide. It is worth remarking too, that low tidal crevices can offer habitats to some ellobiids at a shore level receiving a good spoll of tidal immersion. (see Morton, 1955 for the British Leucophytia bidentata). At times of immersion, the crevice itself or small isolated recesses may retain air. The same may be possible with the curling and irregular sheets of Dakaria.

As Dakaria dries out to a large extent in winter, it may be questioned whether its association with Leuconopsis is permanent, or can last over winter. Leuconopsis is unlikely to be annual, as some of the individuals were not fully grown, suggesting at least a two season life expectancy for this population.

Other pulmonates noted on the lower shore in New Zealand include Siphonaria zelandica and S. cookiana among mussels at extreme low tide, and Gadinalcea conica in tidal caverns and algal holdfasts.

Acknowledgement; I would like to thank Prof. Morton for his many helpful suggestions on this articla.

Elliott, B. "Siphonaria cookiana Suter", "Poirieria", 9/2, p. 30.

Miller, M. & Batt, G. "Reef and Beach Life of New Zealand"

Morton, J. E. 1955 Phil. Roy. Soc. B. 239, 89-160.

Morton, J. E. & Miller, M. "The New Zealand Sea Shore."

DISTRIBUTION OF TURBO CEPOIDES Smith 1880.

R.C. Grange

The Turbin shell Turbo cepoides Smith 1880, seems to be restricted (according to most publications) to Lord Howe Island and adjacent reefs. From information received from recent scientific surveys in the North Tasman Sea, it would appear to be more widespread.



Specimens of this shell have been collected on several coral reefs as far north as South Bellona Reef - approx. 600 miles to the north. A large shell, growing to about 100mm., it has a rough porcelain-like operculum, which bears a bright rusty-orange coloured stain. Juvenile specimens are brightly coloured, ranging through patterned greens, yellows and khaki browns. Some adult shells keep their colour, but many are a dull grey, probably caused by the effects of the exposed areas in which they live.

THE DOUG. SNOOK COLLECTION

D. Lamb

Doug. Snook has been a collector since 1967 and his shells, coupled with his artistic ability achieved well-deserved success in the 2nd. Auckland Shell Show when his seven entries produced 1st. prizes in Volute, Murex and Shells of one Country classes, a 2nd. for Cowries, 3rd. for Cones and a Highly Commended in the Art Section. On top of this, his Murex exhibit received both the Exhibitors' and the Public's Choice awards. One aspect of the entries was the extremely neat presentation and Doug's whole collection is arranged and displayed in this style. All trays are made of coloured cardboard and are size related and each has a card with full data carefully written up in Indian ink. Many of us write up labels fully but with rather less skill and often the labels are tucked away in the shell or at the bottom of the tray. In Doug's case, all data is displayed, which, of course has the drawback of requiring extra space- he hopes that the collection will soon have its own home and so remove this problem.

Doug's first exchange was in 1968 and he was fortunate to obtain a supply of Astrea heliotropium which enabled him to obtain some excellent Japanese material in exchange - not a bad start to his collection. He also obtained a number of excellent specimens from T.P. Warren's collection when Phil. moved South, and then in 1976 he went on the Club's trip to the New Hebrides.

The "favourite families" are Murex, Cowries and Land Snails but all shells are collected. The Murex shells include a huge Murex pecten and rarities such as Pterygotus bednalli, Homalocantha anatomius and Chicoreus palmarosae together with a group of smallish but bright yellow Pterotyphis eos personally collected by Doug. Thanks to the ex-Warren shells, the Collection of Paryphanta and Placostylus is exceptional for a newcomer to Conchology. The outstanding cowry is, of course, Cypraea aurantium but of special interest were three Cypraea lamarckii from Mozambique, C. arabica immanis and C. onyx melanesciae. Among the Volutes I noticed Cymbiolacea thatcheri and Nannamoria parabola (both prizes from the Shell Show), Fusivoluta clarkei and Iredalina mirabilis. Other items of interest were Cabestana spengleri (olteniana form), Cymatium lotorium and a very big Cymatium pileare, Charonia lampas rubicunda - obtained when Doug saw a boy coming to the surface with it at Mount Maunganui (rather a timely piece of sightseeing); Fusinus genticus F. duplicitus cuarsi, two F. couei from Mexico, Fasciolaria granosa from Panama, Strombus marginatus, Lambis digitata, Xenophallium royanum, Columbarium (Coluzea) spiralis, Neptunea despecta from the Farcroes and three most interesting bivalves - Euciroa galathea, obtained from a prawn survey team, Sunetta meroe from Samoa and the lovely Nemocardium probatum.

The Collection is catalogued into families and there are shells from 50 countries. Doug. has a respectable library of shell books but he regards his copy of the Times Atlas as one of the most useful and instructive items therein and its wealth of information was quite startling. The remarkable feature of the collection was the any single tray could be put out for viewing without any extra work given to it. Since I contacted Doug only a couple of hours before arriving I saw the shells displayed as they must always be - good enough to show!

THE FIRST RECORD OF SEGMENTINA COMPLANATA (L.)

FROM NEW ZEALAND.

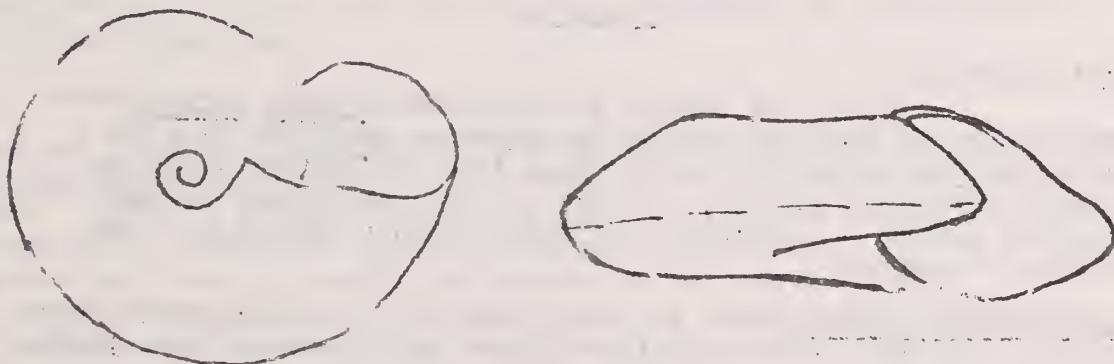
B. Hazelwood

My attention was aroused while examining some freshwater shells in Cecil Broomfield's collection. I had not seen these before so naturally enquired where they had come from.

It seems that Bev. Elliott, while in New Plymouth, had been looking for Planorbis corinna Gray 1850, under the lily pads within the bowl of Brooklands, and had come across these strange little molluscs.

In 1978 Cecil visited New Plymouth and collected further specimens from the same locality. Apparently this species is firmly established in the area. I am unaware as to what range they may have achieved in New Zealand, so far.

(The single specimen from New Plymouth which was sent up to me, has the upper whorls more dome shaped than any in a series of specimens from England with which it has been compared. The colour is also darker - a reddish-brown. Ed.)



Reference:- "Identification of the British Mollusca", Gordon E. Beedham, B.Sc., Ph.D.

Hulton Group Keys; Edited Antony R. Kenney, M.A., B.Sc.

Segmentina complanata (L.) (Planorbis complanatus L.)

Height 1mm. Breadth 4mm.

Diagnostic characters; Shell very small, thin, forming bi-convex disc, 4 rapidly increasing whorls; surface glossy, pale yellowish brown; aperture shaped like arrow head.

Habitat; The species is found in hard water throughout most of the British Isles, except W - N Scotland.

THE PACIFIC SPECIES OF THE GENUS CELLANA H. Adams, (PATELLIDAE).

N.W. Gardner.

The true limpets of the genus Cellana are molluscs which scarcely need an introduction for they are very plentiful on most of our rocky intertidal shore line, perched high and dry and motionless when the tide is out, and actively rasping the rocks clean of algae when the tide is in.

While we can claim six very fine endemic species, there are numerous other species dispersed over the Indo Pacific region, - from the coast of Natal in the west right across to the Island of Juan Fernandez off the coast of Chile.

The shell of Cellana is of similar shape to some of the Patellids (which occur predominantly along the eastern Atlantic sea-board with some related forms in the Indo Pacific,) but has the interior usually highly glazed. The radula is quite different too, being much larger - in some species five times the length of the animal. In the genera Patella and Nacella, the gill cordon is complete but in Cellana it is interrupted by the head.

Listed in this article are the species occurring around the Pacific Basin, with some distributional notes on our own species.

Pacific species;

Of all the species in this genus, Cellana radiata Born seems to have the greatest area of distribution, extending from the African mainland across the Indian Ocean into the Pacific region as far as the Marquesas Islands. It is as one would expect for such a widespread species - a variable shell with several sub-species being generally recognised;

Cellana radiata radiata Born is not a large species, usually dark brown in colour with fine close radiating ribs, and the spatulate area inside, chestnut brown. 40mm. In the Pacific region, it occurs in New Guinea, Sabah, Philippines and Queensland.

Subspecies enneagona (Reeve 1854), is a more elongated limpet, also finely ribbed, but with nine heavier, radiating folds. 54mm. The shell has purplish brown streaks on a pale ground. Relatively common in the Philippines and Japan.

Subspecies orientalis Pilsbry, 1891, small, ovate, cream coloured, often with chevron shaped markings in brown. Linear spaced radials with eleven heavier folds. Spathula not so distinct. Found in North Australia, Solomons, New Caledonia, Tonga, Fiji and Marquesas Is.

The long eastern coastline of Australia supports a number of species apart from radiata already mentioned. South Queensland is the home of Cellana conciliata Iredale 1940, which is larger than the former, has fine ribbing and usually a bluish grey exterior, no prominent colour pattern and a brown spathula, inside.

The species turbator Iredale 1940, has been recorded only from around Coloundra and is not well known or easy to identify. It is a small species apparently not easily separated from local examples of the well known southern C. tramoserica (Holten 1802), which extends from the southern Australian States into Queensland.

One other Australian species which just qualifies for inclusion in this list is C. solida (Blainville 1825), which ranges from South Australia to Tasmania and Victoria. As the name suggests, it is a thick, solid limpet found in the littoral zone,

Lord Howe Island has two species present and the adult shells of these are not easy to separate. However, the differences are quite marked in young or sub-adult specimens. In Cellana howensis Iredale 1940, the ribbing of low rather broad radials is fairly even right round the shell, but in C. analogia Iredale 1940, the radials are scabrous, heavier and uneven in strength, some 7 or 8 being raised and distinctly dominant. These two species grow to about 40mm.

Norfolk Island to the north has no Cellana although the rocky nature of the shore seems ideal.

Kermadec Islands, to the north of New Zealand apparently has but a single species, although a number of local forms have been given names in the past. It is a variable species; C. craticulata (Suter 1905) is relatively plentiful on intertidal rocks and grows to nearly 50mm. It is a depressed species with broadly rounded radials, uneven in some specimens. The dominant colour pattern is olive, with most of the radials streaked in dark brown or black. Silvery inside with dark sepiia spathula.

Fiji has two species, one endemic and the other the widespread C. radiata sub-species orientalis (this is the type locality). The endemic Cellana vitiensis is like a small testudinaria but more evenly rounded and the radial sculpture is stronger. Colour, dark brown rayed with blue-green tessellations. Interior lead-grey; narrow black margin. Apparently, not very abundant; has been collected on Bega Id., Viti Levu and Levuka, Ovalau Island.

Samoa;— Three species are known from this group and again, C. radiata orientalis is present.

Cellana pricei Powell 1973 has been collected on intertidal rocks near Apia, but there does not seem to be any other records for the group.

This species is recognised by its silver-grey to greenish black colour, interrupted by short marginal white streaks at the extremity of the primary radials. 35mm. Rather coarse rounded radial ribs.

Also present is Cellana toreuma which strikes a discordant note for this species is considered at home in the Japanese region. Either the full range of the species is not properly known or it is a recent migrant. It has also been recorded from Tanna Id., New Hebrides.

Very large specimens of C. testudinaria occur in the Philippines. This is the largest species of the genus with specimens of up to 95mm. being known. The species is not restricted to the Philippines but has a considerable range extending from the Ryukyu Islands, south of Japan, through Indonesia, New Guinea, Nth. Australia, Solomons, New Caledonia and New Hebrides.

Japan;

One of the most striking species of Cellana occurs here - Cellana nigrolineata (Reeve 1854), has a distinctive colour pattern; externally, it is greenish blue with radial ribs of red brown - occasionally black, while inside, the rib pattern shows through, and there is an orange coloured spathula.

Cellana toreuma (Reeve 1855), is a thin, long, oval species which grows to 40mm. A variable species, the usual colour being greenish or buff with blotched red-brown or rayed pattern showing through the thin shell. Range; Japan, Taiwan, Hongkong, China, Philippines, & Marianas.

C. grata (Gould 1859), a common Japanese limpet found also in Korea. The apex is fairly high and sculpture is of prominent scaly radial ribs. Shell greyish, with dashes of red-brown.

The species mazatlandica (Sowerby 1839), is restricted to the Bonin Islands, South east of Japan. This is a distinctive limpet of good size, rather thin shelled, yellowish brown with strong scaly radial ribs.

Hawaii;

Two endemic species occur in these islands. Cellana exarata (Reeve 1854), grows to 85mm. The apex is central and it has straight radiating ribs of black on a grey or whitish ground. The second species is less common, is larger, has a high arched profile with a reddish exterior and narrow rounded radials. Said to live near low tide level. (C. talcosa Gld)

Tuamotu Group;

The Society Islands and Pitcairn Id. have one endemic species - Cellana taitensis (Röding 1798). This is of small size, greenish in colour with radial streaks and blotches of dark brown. Ribbing consists of narrow radials and concentric growth lines. 33mm. Occurs on dark volcanic rock, but apparently is not common.

The most easterly record of Cellana is that of the species ardosiaca (Hom. & Jac. 1841), which occurs on the island of Juan Fernandez, off the coast of Chile. It is a distinctive species, almost circular with a central apex and fine ribbing. Colour, grey to olive with a greenish margin; silver-grey inside. 57mm.

Notes on our own species of Cellana

Cellana denticulata (Martyn 1784); Range - Kaikoura to Three Kings Is. Very large specimens occur at the former locality, up to 84mm. A common species about Wellington and is found living on various headlands up the east coast of the North Island as far as East Cape; less common northwards, but not uncommon at Cape Maria on tidal ledges. Dominant limpet at Three Kings Is.

Cellana flava (Hutton 1873); Range - Kaikoura to about East Cape. This is recognised by its orange to pale flesh coloured interior. Without colour pattern though some juveniles may have one or two dark dashes near the margin. Oval in shape, up to 70 mm.

Cellana ornata (Dill. 1817); Found throughout New Zealand and Stewart Id., but more common in the north than the south. Occurs also on Three Kings Is. Not a large species; colour pattern fairly constant with white spots on the radiating ribs in clean specimens.

Cellana radians (Gmelin 1791); Occurs from Three Kings Is. to Stewart Id. This is a variable species with several forms. Typical specimens have a low profile and generally exhibit a tortoise shell pattern in younger shells (sometimes referred to as the carlili pattern.) This pattern becomes obscured in heavier and thickened older shells. It grows to its greatest size in northern areas but along the south westland coast, C. radians apparently does not find life easy as the shells are very small - about 20mm. when fully adult. The shell is rather flat with radiating ribs corresponding to chocolate brown streaks on the inside of the shell.

The perana form is uniform grey with a whitish glaze inside. Very common on the West Coast of the South Island.

A black form with fine, close but distinct radial ribbing occurs on the Three Kings Islands, - an interesting variety.

Cellana strigilis (Hom. & Jac. 1841). and sub species

Amongst the Pacific Cellana strigilis is of special interest in that it has the most southerly dispersal of any species, venturing into the Sub-Antarctic waters at Campbell Island, where one would expect to find limpets of the cold water genus Nacella.

Of all the recognised subspecies, the mainland C. redimiculum has the most attractive shell, large but not high at the apex and with a distinctive ocellate pattern. This is the dominant limpet around the south of the South Island and at Stewart Island and extends up the east coast to at least as far as Kaikoura, where there are fine examples.

The Chatham Island subspecies, appropriately named chathamensis (Pilsbry 1891), resembles the mainland redimiculum but the apex is higher, with a more rounded outline and a colour pattern of radiating re-brown radials.

Typical C. strigilis subsp. strigilis (Hom. & Jac. 1841), occurs on Auckland and Campbell Islands. This is quite a large limpet (it grows to 80mm.) and is distinguished from our mainland form by its darker colour and a sombre sooty grey interior. The outside of the shell can be brown to greenish with a few spots and streaks of yellowish white.

The other sub species are not so well known - understandable when one considers the remote islands where they occur.

Sub-species bollonsi Powell 1955, from the Antipodes Islands, is said to be easily distinguished by its dense pattern of interstitial brown lines and streaks on a greenish grey ground.

Sub-species flemingi Powell 1955, occurs on the Snares Islands and differs from other subspecies in its consistently narrow, oval shape, arched profile and the anterior position of the nucleus. Dark rayed colour pattern.

Subspecies oliveri Powell 1955, -Bounty Islands; has a narrow ovate, depressed shape with the apex at, or near to, the anterior end. There is a bold pattern of radial streaks and blotches.

Cellana stellifera (Gmelin 1791); Unlike our other species of Cellana which colonise the intertidal rocks and ledges, stellifera lives just below low tide on smooth rock faces. It prefers clean water situations and is not very easy to find. Living specimens are often covered with a dark brown algae. A broadly oval shell, with a rather low profile, it is easily recognised, when clean or held up to the light by a pale coloured star at the apex; with the rays often extending to the edge of the shell. The exterior otherwise is reddish brown with fine radials, the interior a bluish, silver grey colour. Range is from Stewart Id. (rarely), to the Far North, where it is more frequently found.

Notes of Interest

From Betty Grange; - Further to the item in "Poirieria" Vol. 9, pt. 6, page 108, Oct. 1978, re identification of a Chlamys found in sponge along with C. zelandiae on Kaimaumau Beach. - It has now been identified as Chlamys asperrimus asperrimoides, Powell, a subspecies usually found by dredging in the Norfolk Id. and Kermadec Is. area

This is possibly the first recorded specimen from New Zealand.

PSEUDOVERMIS HANCOCKI Challis

N.G.

Conchologists soon learn that many of the molluscs they come across, live in definite ecological habitats, this preference being the exploitation of a niche not filled by competition with other species. Some of these habitats are unusual and rather unexpected, one being that occupied by the genus Pseudovermis.

Pseudovermis hancocki Challis, is a very small and extremely rare New Zealand nudibranch, - the only species of the genus so far recorded in New Zealand, although other species occur in Europe, Brazil and the Solomon Islands. All are known as interstitial molluscs, that is, they live between grains of sand on the sea floor. The sand must be very clean, usually foraminiferous and minus any clogging silt.

The animals are obtained by placing a small amount of sand, covered by sea water, in a bowl and swirling around by hand until a vortex is formed. The supernatant water is then decanted off through a 100 micron mesh net. So far only two specimens of this rare species have been obtained. The holotype was collected from sand dredged in 7 metres of water off the southern side of Urapukapuka Island, Bay of Islands, and a second example from a similar depth off Arohia Island, also in the Bay of Islands.



Pseudovermis hancocki is well adapted for moving around in its habitat - a slender elongated mollusc with few hindering projections. It is thought that the food of this species is a solitary sand-dwelling hydroid Heterostephanus which also lives in a similar situation.

References;

Challis D.A. New Species of Pseudovermis (Opisthobranchia); (Aeolidacea) from New Zealand and the Solomon Islands.

Trans. R.Soc.
Biol. Sc. Vol. 11. No. 10, 1969,
pp. 153 - 165.

SOME NOTES ON THE GENUS RHYTIDA (PARYPHANTIDAE),
AND ITS DISTRIBUTION.

C.G. Dawber
(Junior member)

The landsnail genus Rhytida was erected by Albers in 1860 to contain a specimen of what was then called Helix greenwoodi and which had been collected by Gray some ten years earlier. 11 New Zealand species have been described since, along with 6 subspecies; 5 Wainuia are now included in the genus.

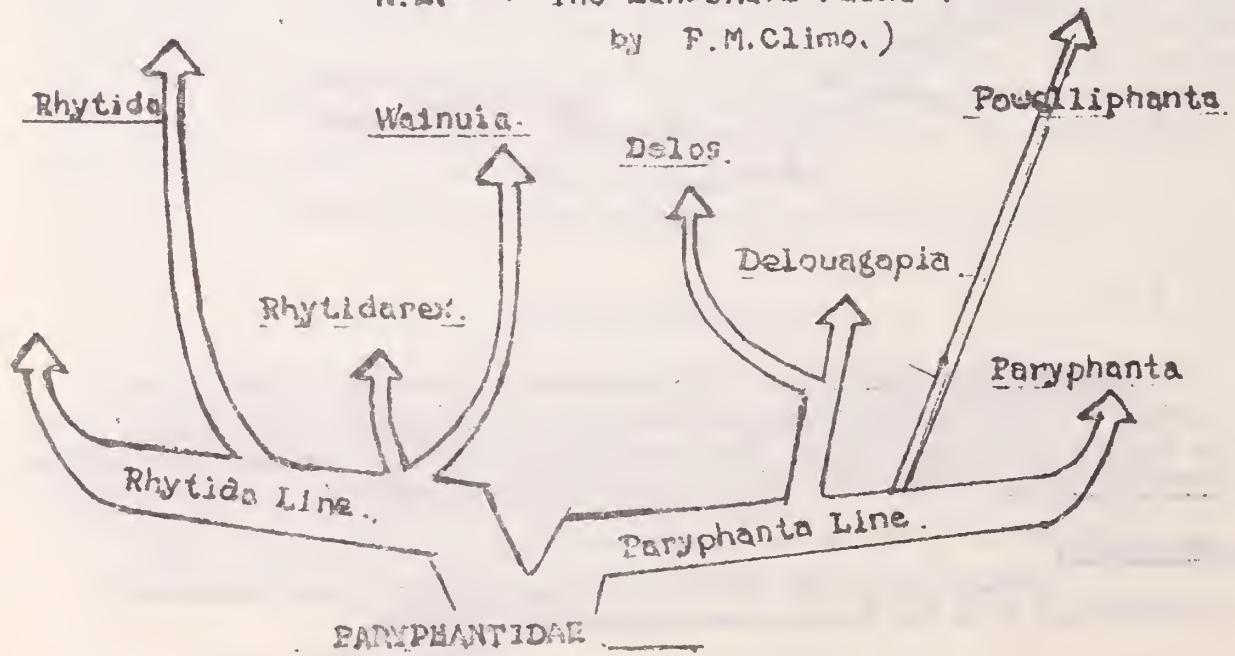
Within New Zealand, distribution is quite widespread and with the recent discovery of sub-fossil varieties, the range extends from Three Kings Is., right through and down to Stewart Island. The Rhytida snails are considered to be an ancestral form of our larger Paryphanta and even today distinct similarities can be noted.

Generally, these snails are nocturnal, although they sometimes move about in overcast periods. They are strictly terrestrial, living in heaps of leaf mould and other decaying debris. Their diet consists of earth worms, insects and other small snails. Not only are they carnivores but also cannibalistic, often devouring their own offspring.

A Phylogeny of N.Z. Paryphantidae.

(Taken from "Biogeography & Ecology in N.Z. - The Landsnail Fauna".

by F.M. Climo.)



CLASSIFICATION

FAMILY - *Rhytididae* (Pilsbry 1893)
Sub Family - *Rhytidinae* (Pilsbry 1893)
Genus - *Rhytidida* Albers 1860
Sub genus - *Rhytidida* (*Rhytidida*) (Albers 1860)
Sub genus - *Rhytidida* (*Rhytidarex*) Powell 1848
Sub genus - *Rhytidida* (*Ambohytidida*) Climo 1974
Sub genus - *Rhytidida* (*Wainuia*) Powell 1930

Full List of Species in 1976

Sub-genus; -*Rhytidida* (*Rhytidida*)

Rhytidida greenwoodi greenwoodi (Gray 1850)
R. *greenwoodi stephenensis* Powell 1930
R. *greenwoodi webbi* Powell 1949
Rhytidida meesoni (Suter 1891)
R. *meesoni perampla* Powell 1946
Rhytidida australis (Hutton 1883)
R. *Rhytidula citagoensis* (Hutton 1883)
R. *citrina* (Hutton 1883)

and two sub-fossil varieties -

Rhytidida oconnori=hadfieldi Powell 1946
R. *yaldmani* (Dell 1956)

Sub-genus; -*Rhytidida* (*Ambohytidida*)

Rhytidida dunniae dunniae (Gray 1840)
R. *dunniae forsythi* Powell 1952
R. *dunniae pycrofti* Powell 1952
R. *dunniae tarangaensis* Powell 1930
R. *duplicata* Suter 1904

Sub-genus; -*Rhytidida* (*Rhytidarex*)

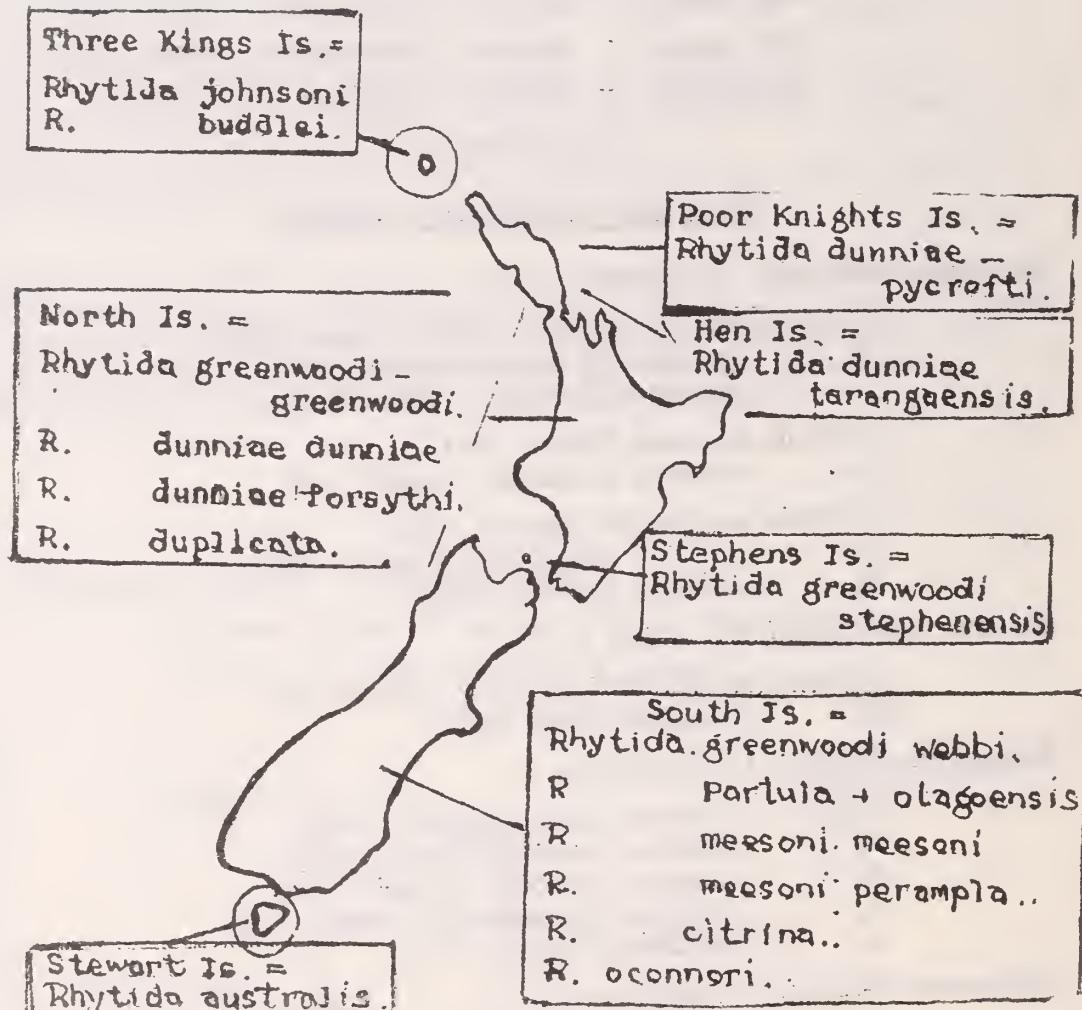
Rhytidida johnsoni Powell 1948
R. *buddlei* Powell 1948

Sub-genus; -*Rhytidida* (*Wainuia*)

Wainuia urnula urnula (Pfeiffer 1855)
W. *urnula nasuta* Powell 1946
W. *clarki* Powell 1936
W. *fallai* Powell 1946
W. *edwardi* (Suter 1899)

DISTRIBUTION of SPECIES

Specific Locations.

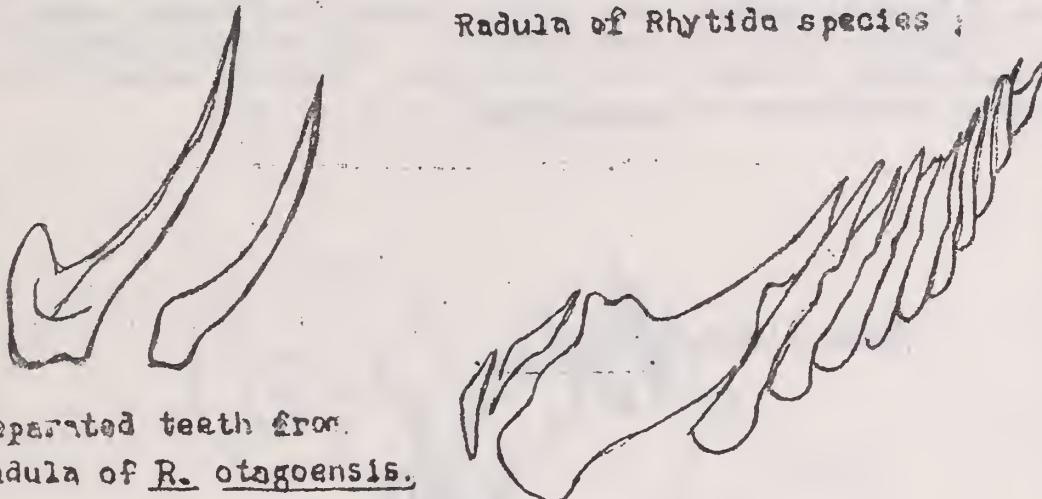


As can be seen from the above map, *R. greenwoodi* is the only species which occurs in both North and South Islands.

Species included in Rhytidarex are confined to the Three Kings Is., while those placed in Ambohytidida are restricted to the north of the North Island.

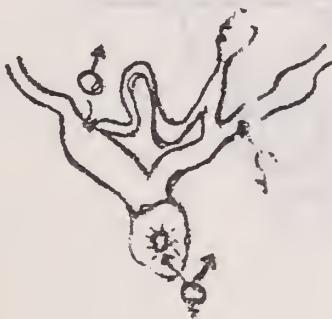
THE RADULA:- As the *Rhytida* genus is a carnivorous one, the teeth are similar to those of other carnivores (Few but strong), and this may be seen in the following diagrams.

Radula of *Rhytida* species :



Separated teeth from
radula of R. otagoensis.

Rhytida Reproductive System :



REPRODUCTIVE SYSTEM:-

The Amborhytida sub-genus has a reduced penis and the reproductive anatomy of Rhytidarex is intermediate between that of Rhytida and Amborhytida.

The diagrams show the contrasting reproduction systems of Rhytida and its northern sub-gen.

Rhytida (Amborhytida) Reproductive System.



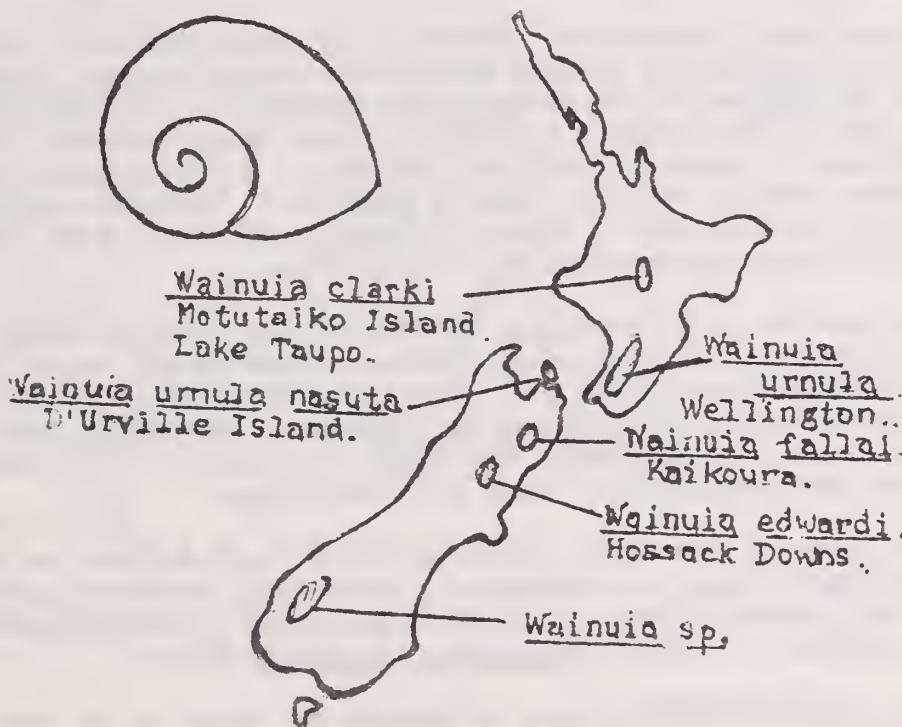
NEW ZEALAND DURING THE PLIOCENE EPOCH

Recent discovery of pebbles of South Island origin found in conglomerates at Wanganui, indicate that sometime during the Pliocene period there was a landbridge across the Cook Strait. The isthmus, according to geologists, dates to around 11,000 years ago. This may account for the widespread distribution of R. greenwoodi.



Wainuia:- The Wainuia sub-genus is intermediate in shell character, radula and reproductive morphology between Rhytida and sub-species Powelliphanta. The shell is shiny and dark brown (with a goldy protconch.)

Distribution of Wainuia:



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- Suter, H. - Manual of New Zealand Mollusca.
- "Poirieria" -(Auckland Conchology Section pub.) Vol. 3, Part 6, March 1967.

CAVE SNAILS AND SUCH.

N.W.G.

It is quite understandable that one group of tiny fluviatile molluscs which never see the light of day, have been long overlooked and so long in being discovered.

These are the phreatic and cavernicolous snails which, rather surprisingly are well represented in New Zealand and have been fairly recently worked over and written up quite extensively by Dr. F. Climo, National Museum.

That these small prosobranch cavernicolous snails, which are blind, can exist quite satisfactorily in cold subterranean water in total darkness well below the surface of the ground, seems incredible - perhaps even more so in the case of the phreatic species, for these live, often well down, in the interstices of gravels of alluvial plains. A more unlikely and claustrophobic habitat would be hard to imagine. Yet, given oxygenated water and the availability of organic detritus food washed down, these species exist quite successfully in the darkness.

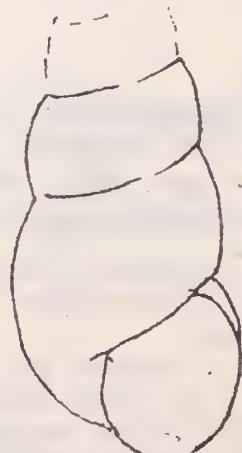
Most of the records of subterranean hydrobiids come from the Nelson area, which has considerable limestone sub surface waterways and caves, and also from the aluvial Waimea plains where water from bores, has been run through a screen and deposited some interesting minutiae. Specimens have been taken from bores and wells within the limits of Nelson City and there are also records from Napier, North Otago and Canterbury.

Apart from the Hydrobiid species referred to, we do have one rather special freshwater snail - a pulmonate of the family Punctidae, apparently the first one recorded living in freshwater as well as having a subterranean habitat. This is Hydrophrea academica Climo.

Scientific shell names bother many collectors but there is one New Zealand subterranean species which should be easy to remember and that is Horatia nelsonensis - Just think of Trafalgar.

In all, eleven species of subterranean freshwater snails have been recorded from New Zealand. These belong in six genera and examples of each are illustrated.

Tyoe specimen 2.75
x 1.25 mm.



Potamopyrgus subterraneus Suter.
South Canterbury and
North Otago.

All are minute species
- less than 2.5mm :



Hadopyrgus anops Climo



Kushelita mica Climo
Nelson.



Catapyrgus speleus.
Climo.



Horatia nelsonensis Climo. Motueka.



Opacuinocola kusheli Climo
Oparara, South Island.



Hydrophrica academica Climo

THE D.H.BAKER COLLECTION

D.Lamb

David Baker was one of the original group of enthusiasts who joined the Club back in 1930. He was a keen collector until 1934 when he elected to devote more time to his other interests. He maintained his collection, however and added to it during the intervening years until 1960 when his interest underwent a resurgence. Since then, he has been a regular attender at meetings of the Section and I remember quite vividly sitting next to him at two of the auctions when his arm got stuck in the bidding position. Still - he did go home with the Cassis temuis ex Miss Jane's collection.

Mr.Baker has exchanged with a few good contacts - one of his first being Dr.Fred Baker(*Fusus ferdinandi*), no relation, but sharing the same surname got things off to a good start. He has bought from various dealers, generally being favoured with excellent specimens, and he has collected quite widely. Initially, he told me he had collected in the New Hebrides Victoria, Fiji and casually in the Solomon Islands where he was working in 1938 - 1940. Gradually, however, as we continued to examine the collection, I found out that he had also collected at Lord Howe Island, Queensland; California, Florida, Jamaica and a few other Caribbean Islands, Acapulco, and New Zealand ! The Fiji trip was organised by Mr.W.O.Cernohorsky and others in the party included Mark Tapply, Isobel and George Rigden and Max. Marrow. Mr.Baker has had a little help from his sons and daughter who have been working overseas at some time or other and have collected from odd places, though not quite often enough for father's taste !

The collection is catalogued by family, and the correspondence relating to overseas exchanges is available in support. The shells are well housed in large cabinets but more work in organising into family or generic groups is planned as a retirement project. All the shells have data slips with them so the reorganisation is really only a labour of love.

Mr.Baker claimed not to have any favourite families, although we lingered over the land snails which were well represented - both our Paryphantidae and Bulimulidae as well as overseas species, including a fine range of Hawaiian Adhatonellas and a collection of Urocoptis from Cuba, which may well be quite exceptional. The story behind these can only be appreciated whilst looking at the minute and uniformly drab-coloured specimens.

What of the shells? - you may be asking, if you have read this far. I am never too sure whether to list the rare shells and the commoner but outstanding shells, separately (and so expose my lack of knowledge by putting them in the wrong group), or lump them together. In any event, I just cannot list all the interesting items and probably some of the rarest would also be small and get overlooked. The following certainly attracted my attention without the aid of any neon signs.

Chiton hoodallii (from the Galapagos), Perotrochus hirasei, Maurea blacki, Maurea magnifica W/O, Cypraea aurantium, C. hungerfordi, C. sauli, C. humphreysii (three very spotted shells from Fiji as far removed from C. lutea as one could wish), C. friendi, C. venusta, C. marginata, C. teuleri and the beautiful C. tessellata from Hawaii. New Zealand is represented by Erosaria cernica tomlini from the Poor Knights Is..

My critical view of the Conidae was satisfied (whetted?) by specimens of Conus bengalensis, C. gloriamaris, C. bullatus, C. voluminalis, C. lynceus, C. augur, C. pertusus, C. coccineus and a large group of C. recurvus.

Cassids include Cassis coarctata from Galapagos (I recall writing for this very shell and being advised that I had been beaten by a day or two !), two self-collected Xenophallium labiatum and Cassis temuis.

The Strombs include Strombus latissimus, S. listeri, S. gallus, S. goliath, S. taurus as well as Tibia martini, T. powisi and a lovely Variocospira (Rimella) cancellata.

The Lambis species include L. digitata from Malagasy and several really fine L. crocata. The beautiful Murex alabaster was a special treat and the Volutidae are very well represented and include Lyria kurodai, Cymbium olla, Cymbiola aulica, Zidona angulata, Volutoconus grossi, V. bednalli, Iredalina mirabilis, Ericusa papillosa, Livonia roadnightae and a specimen of the indecent Cottonia nodiplicata (it usually goes topless.)

Others include Mitra becheri, Vexillum dennisoni, V. regina filacregina, Afrivoluta pringlei, Marginella desjardini, M. dullata and a very interesting bivalve from Greece - Spondylus gaderopus L.

Time really ran out, and towards midnight we rushed a few trays. The whole evening was most enjoyable and I continue to be amazed at the number of new species I see. One point, which may benefit members building or altering a Shell Room, was that we were able to place the trays on a fairly high cabinet which enabled us to view them without undue strain - this was quite appreciated after three or four hours.

RECENT PUBLICATIONS

Additional dextral Triphorids (Mollusca: Gastropoda) from New Zealand

B.A. Marshall
National Museum of N.Z.

New Zealand Journal of Zoology, 1979, Vol. 6, pp. 397 - 404.

Abstract:

Socienna maoria Finlay and Mendax duplicarinata Powell are referred to Metaxia onterosato. Metaxia solitaria n.sp., Socienna cracens regia n. subsp. are described. Additional range data are provided for Metaxia exaltata (Powell).

New Zealand Mollusca - Marine, Land

and Freshwater.

A.W.B. Powell

Published; - William Collins Ltd;
Auckland.

This long awaited and monumental work is the first full treatment of New Zealand Mollusca since the publication of Henry Suter's Manual of Mollusca in 1913. - long since out of print.

Over 1000 species have been added to our faunal list since Suter's day and this brings the total number of recognised species -marine, land and freshwater to 2245, all of which are covered in this very well printed and comprehensive tome.

Treatment is in systematic order, with each species being given a brief description and locality data etc. - all this under one cover, makes it especially invaluable.

Illustrations are excellent, covering in all some 1550 of the listed species. There are 16 full page colour plates, sixtysix in monochrome, as well as 120 text figures.

This book is a must for all students of the New Zealand Molluscan Fauna.

Editors; N. & N. Gardner,
6 Tui Glen Rd.,
Birkenhead,
Auckland, 10.
New Zealand.

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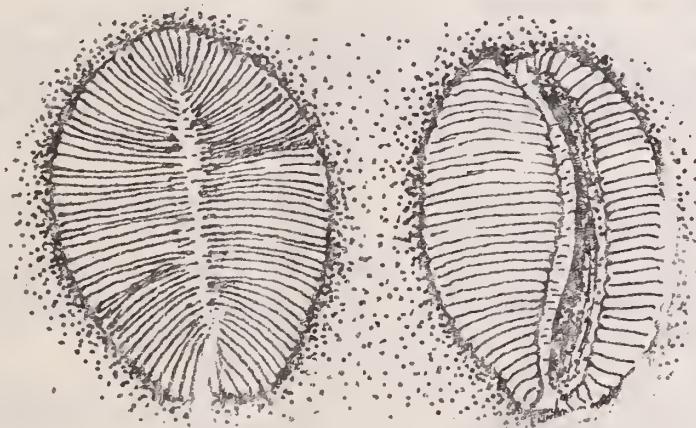
Part 5.

May 1980.

TRIVIROSTRA ORYZA (Lamarck) - Another New Record.

It is now some time since we have been able to report the finding of a previously unrecorded warm water species of mollusc from around our shores. However, we can now do this with the finding of a specimen of another species of Trivia.

A freshly dead specimen of the little white Trivirostra oryza (Lamarck), was found on a sand patch at about 12 metres, by Kevin Burch while diving at Poor Knights Islands, recently.



The specimen, a little over 1 c.m., has the usual quite strong traverse ribs and central area not particularly well defined.

It is much smaller than Trivia merces (Iredale), with which we are more familiar and is pure white in colour, without any colour blotches at all. According to Hunter Seelye, who has seen a number of live specimens of T. oryza on the Great Barrier Reef, Queensland, the animal is a dirty grey or black in colour.

A DAY'S TRIP TO STEWART ISLAND.

Coral E.Bissett

On the 2nd January, 1980, my son and I caught the M.V. "Wairua" from Bluff to Stewart Island. After a few minutes at sea, our Captain advised us that it would be a bit rough and wet for twenty minutes, but nothing to worry about. We were in the glassed in cabin at the fore of the boat and it was quite exciting watching the mast buck up and down with the breakers for a while - until it was "abandon stomach", as we succumbed to mal de mer!

After a two hour trip we arrived at Halfmoon Bay and the township of Oban. It was still pouring with rain and as we had only four hours on the Island before the ferry departed at 1.45p.m., we first climbed up a steep road set among native bush to Observation Rock, where we had a marvellous view of Paterson Inlet and the island of Ulva, Golden Bay, Thule Bay and Iona Island rain or no rain!

On the way back, we visited the Stewart Island Museum. This is a Conchologist's paradise as there is a very comprehensive display of Stewart Island shells, all well set out and clearly labelled. The scallops and brachiopods were especially interesting.

Then we went to the nearby beach of Lonnekers Bay, and found washed up on the golden sand; Astrea heliotropium, Mytilus edulis aoteanus, Aulacomya maoriana, Modiolarca impacta, Pecten novaezelandiae rakiura, Tawera spissa, Ostrea angasi, Cellana strigilis redimiculum, Zethalia zelandica, Zeacolpus symmetricus, and brachiopods Waltonia inconspicua and Notosaria nigricans.

The rain stopped so we went on another short, steep, up and down climb to Bathing Beach, where we had a swim in the clear water with breakers and clean golden sand. On this small jewel of a beach, we found; Gari lineolata, Tawera spissa, Marginula striatula, a small Haliotis australis, Dilodontia globus, Waltonia inconspicua and also some Notosaria nigracans.

We pressed on for another kilometre to the golden sanded, larger Butterfields Beach, but the only interesting shell there was a Gari stangeri - and then realised that we would have to move smartly if we were to catch the ferry. We just made it, with five minutes to spare.

In August 1979, some friends of mine brought me back some shells from Stewart Island - from Horseshoe Bay and Maori Bay, further round than Butterfields. These included; Cantharidus opalus, Gari lineolata, Haliotis australis, Zeacolpus symmetricus, a large number of Struthiolaria papulosa gigas and the Stewart Island form of Alcithoe swainsoni. This is a slender, thin shelled and long spired form, pinkish in colour with a faint trace of brown lines.

While we were on the island, we were able to purchase from the N.Z. Forest Headquarters a set of nine booklets on Stewart Island wild life and also a

booklet entitled "Day Track and General Information", which we found most useful.

One can take a small plane from Invercargill airport to Stewart Island and return the same day. This gives more time than our four hours on the Island. For the Geologists and fossil hunters, Stewart Island is a 'granitic intrusion.'

On the way back to Bluff, we took the advice of a friend who lives on Stewart Island, regarding sea sickness. We went down below and lay flat on our backs on the couches. This worked admirably and we arrived at Bluff looking and feeling much better than when we had arrived at Stewart Island.

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ITEMS OF INTEREST

The Anthropology Dept. Auckland University, has for some little while, been conducting a midden excavation at Wiri, south of Auckland. Amongst the material obtained from these diggings are a number of small native snails.

At the present time there is, of course, no native bush about but judging from the list of species found there must have been at least some scrubby ground cover, some time ago. Not all the specimens are old, - some still retain traces of colour markings and ribbing sculpture. This suggests that they were not laid down at the time of the formation of the midden, but accumulated later. Some specimens are, however, undoubtedly very old and are now powdery and fragile. Species present include ; -

| | |
|---|---|
| <u>Charopa (Mocella) ota</u> Pfr. | <u>Phenacohelix pilula</u> Reeve |
| <u>Dolos jeffreysiana</u> (Pfr.) | <u>Charopa ochra</u> Webster |
| <u>Phrixgnathus fulgurata</u> Suter | <u>Phrixgnathus grabrisculus</u> (Pfr.) |
| <u>Thalassohelix ziczac</u> Gould | Eggs of <u>Rhytida (greenwoodi?)</u> |
| <u>Subflectola caputspinulae</u> Reeve. | |

Introduced species ; -

Hyalinia collaria (Mull.) Vallonia excontrica (St

Others ; - Potamopyrgus antipodum (Gray). Sutorilla zeozelanica (Murdoch)

The carnivorous species, Dolos, seems to be quite plentiful in the material. Perhaps this indicates, a sizable snail population flourished there, for this species to feed on. It would also suggest that the habitat would not have been dry and barren as it is today.

THAIS ORBITA (Gmelin, 1791)

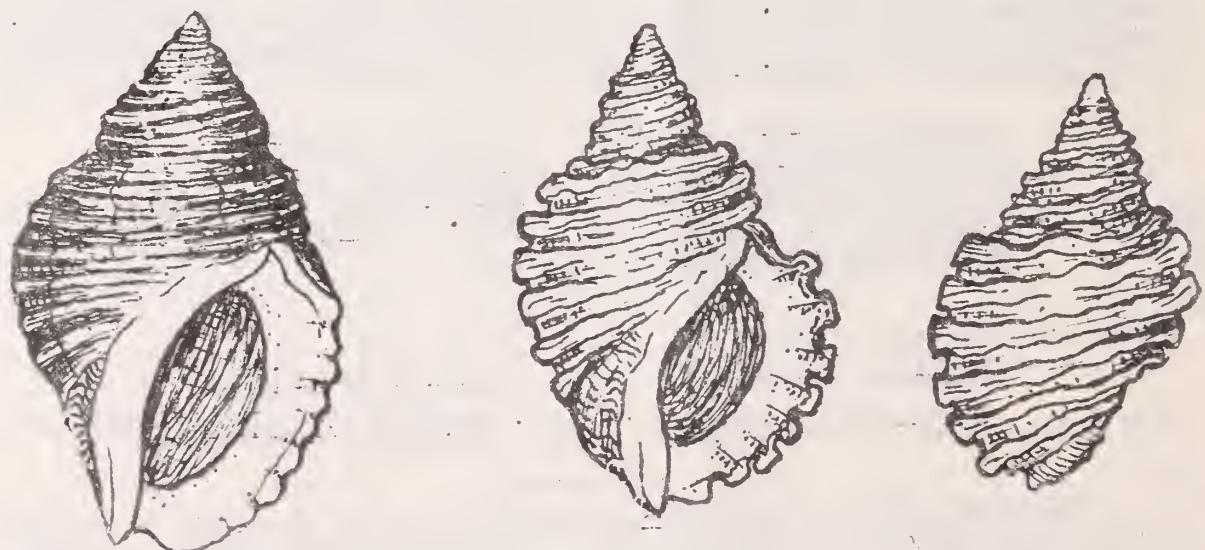
Synonyms - *N. succincta* Martyn & *N. scalaris* Menke)

Our large rockshell, *Thais orbita* (Gmelin), is a very common mollusc around the rocky shores of the North Island and northern part of the South Island. It occurs elsewhere in South Australia, Tasmania, up to the N.S.W. Coast and also at Norfolk Island.

Along our rocky shores, *T. orbita* frequently congregates thickly in crevices and rocky clefts from which it can relatively easily emerge to feed on mussels, the barnacle *Elminius plicatus* and even the cat's eye shell, *T. smaragd*.

As a rule, the shell of *Thais orbita* is white with a yellowish colour within the aperture, but in one or two places, especially at Muriwai, the shells are often attractively mottled in shades of brown.

This common shell is no doubt taken for granted, but close examination shows that it does exhibit considerable variation in its sculpture, ranging from fine, rather even incised spirals to a few coarse, raised spiral cords - the latter resulting in a quite attractive shell. There does not seem to be any particular pattern in the occurrence of either of these two forms, for they can occur in nearby areas of coastline but apparently not together.



For instance, the weaker sculptured specimens occur at Narrow Neck, Waiheke Id., Whangaparoa, Muriwai, Three Kings Islands - the first two being comparatively smooth water situations while the two last are rugged coastline habitats.

Those showing very strongly raised ribbing occur at Russell, Pakiri, Pukemui, Laings Beach, Castlepoint and Westland - again, both sheltered and rough water situations. Of the examples examined, those from Pakiri, are by far the most grossly corrugated. The ribs are contracted below forming a very deep channel around the whorls.

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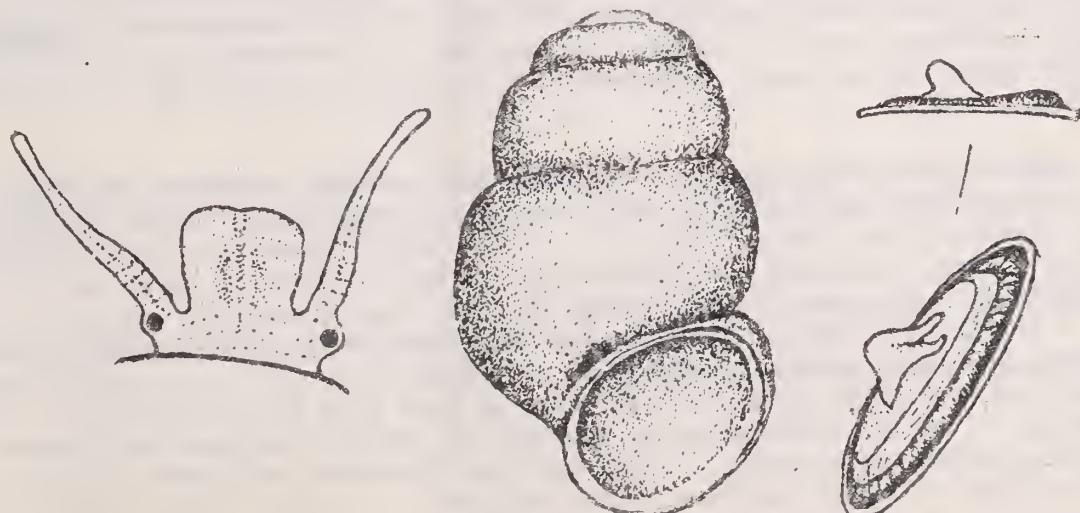
PAXILLOSTIUM NANUM Gardner

N.W. Gardner

Even in the most unlikely situations, there are usually some molluscs which have adapted to what would appear to be a rather uninviting habitat. One of these is Paxillostium nanum, a small freshwater Hydrobiid, so far recorded only in Northland.

The first specimens of P. nanum were, strangely enough, found in a sample of leaf litter collected up for subsequent sorting - tiny dead white shells looking nothing like land snails as we expect them to be, and in an area which did not seem to have any fresh water streams either.

Further visits to the site showed that this mollusc was living in a wet weather seepage area which was previously fairly dry, with only a few dead leaves on a little thick mud. Over much of the year, there would no doubt be a trickle of water along this course. This was up on a bushclad hillside and checks in water courses below, in more open situations, showed that this freshwater species preferred forest situations. Even our prolific and hardy Potamopyrgus is not very keen on such a bush habitat.



So far this species has not been reported south of Dargaville, but its known distribution extends as far north as Herekino and Mangamuka. It is by no means restricted to minor seepage areas, but has now also been collected from the edges of those horrid rusty swamps that we come across in the bush, sometimes.

The following are some of the stations where this mollusc has been found;

5 miles south of Parakao (type locality) -1-69.
near Ruahua Viaduct.
Waimatouui -5-69.
'Tane Mahuta', Waipoua -5-69.
Mangamuka Gorge -5-69
Herekino gorge -1-74.

The chief distinguishing character of Paxillostium is the unusual operculum. This has a raised peg on the inner side, a feature not present in any other of our New Zealand hydrobiids. The genus Hemistomia, which occurs in New Caledonia, has a somewhat similar opercular arrangement.

Incidentally, the name Paxillostium means 'pegged door' and *nanum*, 'small or dwarf.'

- OoO -

AMPHIBOLA CRENATA (Gmelin 1791).

N.W.G.

In New Zealand, mudflats and mud snails are practically synonymous as you will seldom see a mudflat without its sizeable population of Amphibola crenata scattered over its length and breadth. A mudsnail so commonplace, is most likely to be poorly represented in many of our members' collections - almost disregarded.

Only on one occasion, can I remember this mollusc creating any great interest and that was during a visit here some years ago, of the noted Malacologist Yoshio Kondo, of the Bishop Museum. He was being taken on a local collecting trip, and as we drove past a typical mangrove mudflat, became quite excited. "Amphibola!", he shouted - "thousands of them! Stop the car!".

Not all of us are so enthusiastic about mud snails, I fear, nevertheless they do have some special features. Amongst the Amphibolidae of Pulmonates members of the Amphibolidae are of note in that they have all retained their operculum. In this respect, they are said to reflect archaic development from true marine gastropods. They are air breathing molluscs which are quite at home on tidal mudflats, where they have to endure being covered by

water for an hour or two on each tide. The mantle cavity has been utilised as a lung.

Amphibola cronata flourishes throughout New Zealand, where it lives on soft organic mud of tidal flats, especially near mangroves in the North. Sometimes, it is found up in brackish streams, but these specimens are always small and scattered in such a situation.

This mollusc is virtually an unselective deposit feeder, passing much soft mud through the gut with only a very small amount of food being extracted. The mud faeces are much in evidence on mudflats, and are of considerable length.

The animal is hermaphrodite; the spawn is contained in a tyre - like rim of mud and said to contain about 8 to 10 thousand eggs. Very large specimens of this snail occur on the West Coast of the South Island and at Stewart Island.

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PACIFIC PATELLIDAE ; SCUTELLASTRA and ANCISTROMESUS.

In a recent issue of 'Poirieria', we discussed the Collana group of limpets which occurs within the Pacific Basin - a group that is very well represented in this area.

This article deals with the other line of limpets which are perhaps more directly related to the typical Patella of the Atlantic and Mediterranean, and to the large handsome species of South Africa, which are grouped in several closely related subgenera.

The subgenus, which is represented somewhat sparsely in the Pacific, is Scutellastra - being also present along the South African Coast and in the Indian Ocean.

Scutellastra limpets, for the most part have heavy, even massive shells with a porcellaneous interior and not much in the way of external colour pattern. Often, the ribbing is very pronounced with the even marginal outline of

shell interrupted by extended radial folds - unlike the genus Cellana, shells of which have fairly evenly rounded outlines.

Although not strongly represented over much of the Pacific area, they do seem to have a good 'hold' along the southern parts of the Australian coastline, where several species occur.

The two which are included in this article, are;

Patella (Scutellastra) peronii Blainville

Occurs quite plentifully around Tasmania, Victoria and N.S.W. (as well as extending as far as W. Australia). The shell is generally quite strongly ribbed with the apex almost central and outline oval. Grows up to 48 mm. Colour yellowish brown.

Patella (Scutellastra) chapmani Ten Woods.

The baby of the group, a mere 20 - 30 mm., but one that is quite readily recognised, for it is a white shell which is typically strongly lobed, often like an 8 pointed star. Frequently, there is a narrow reddish brown line on the crest of each of the radial ribs. Interior, porcellaneous white. Lives in the littoral zone on rock platforms and boulders. Occurs in Tasmania, South Australia, Victoria and New South Wales.

Patella (Scutellastra) kermadecensis Pilsbry

A species sought by collectors as it is the second largest limpet recorded. Reaches 174 mm. (7 inches). The shell is heavy, broadly ovate but slightly narrowed in front. Radial ribs rather narrow and not particularly prominent. External colour orange, interior porcellaneous white with an orange border to the shell. This species is restricted to the Kermadec Islands and is therefore not easy to obtain. (The subgenus is not represented around our shores though the Kermadec Is. are only 400 miles north of New Zealand.)

Patella (Scutellastra) tucopiana Powell

Another quite large species known only from Tikopia, one of the Santa Cruz Islands, north of the New Hebrides. It is not unlike kermadecensis but smaller, 92 mm. In shape, it is more ovate. The exterior is black and interior creamy white; spatula flesh coloured, with a narrow border of amber colour. The two type specimens are the only known examples.

Patella (Scutellastra) flexuosa Q. & G.

This has quite a widespread distribution and is reasonably common in the Islands to the north of New Zealand. It is a smaller species and as a rule has a flattish shell frequently covered with coraline growths when living on dead coral blocks in shallow water. The margin of the limpet is deeply scalloped, of irregular shape with 8 or 9 strong radiating ribs. Grows to 42 mm. Interior porcellaneous, white; spatula generally white but sometimes yellowish, brown or grey.

Patella (Scutellastra) flexuosa optima Powell

This subspecies occurs around Japan and Ryukyu Islands, and is larger than the typical species, growing to 94 mm. In outline it is strongly lobed with nine or ten brown radial folds. Exterior grey to pale orange, interior porcellaneous white; spatula with some orange or brown and the edge of the shell has a narrow brown margin.

Sub genus Ancistromesus contains but a single species which is to be found from the Gulf of California to Peru. This is Ancistromesus mexicana Brod. & Sby. which is the largest of all known limpets, attaining a size of 350 mm. (14 inches). Smaller specimens have reasonably good sculpture showing rather distinct radials, but the large heavy examples are usually eroded, encrusted or with borer holes and minus sculpture. Externally, dull white; prcellaneous white within.

A unique feature is the black animal.

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ITEMS OF INTEREST

Bcv. Elliott, Kaikoura writes; "I wonder if I have a southern record for Nerita melanotragus? A perfect live specimen 28 mm. at South Bay, Kaikoura on December 11th. 1979. I could hardly believe my eyes, as I have not found one in the South Island before, although I know of two records from N.W. Nelson."

Turritriton labiosus Wood

A very fine dead specimen of 2.5 cm. was picked up by a diver at Poor Knights - Must be the largest example we have seen from N.Z.

Jim Goulstone reports finding on the sandy beach of Mason Bay, Stewart Island, a dozen large specimens of Margarella antipoda rosca which had no trace of colour pattern, being uniform grey in colour. These were on a kelp holdfast, which was washed ashore and could have come some distance.

Small sub adult specimens from shell sand gathered up at the end of Mason Bay, had bright red spiral lines.

Coral Bissott writes, "Last month (October), I was out at Oreti beach and there were about two hundred live, fully grown Astrea heliotropium washed up on the beach, just in one place. With them were a number of Argobuccinum tumidum, also alive. Some were very high and dry and becoming dehydrated so I nursed these back to the water hoping that they would recover."

Jim Rumbal, exploring our Northern beaches found much of interest ; - "I began with a few days at Waiheke Id. and although I did not find an Alcithoe fusus haurokiensis, I did find some interesting Alcithoe arabica at Oneroa. Wading at low water, I found three 'sets' of A. arabica together, each with a typical noduled specimen and the other shell in each case slimmer and indistinctly noduled. Some families have differing shapes between male and female shells and I wonder if this applies to the Alcithoe genus.? Other beach specimens of A. arabica at Oneroa were very pale - fawn buff with thin lines, in an irregular pattern - not banded as with most specimens of A. arabica that I have seen. Mind you, down here in Taranaki, we are rather starved of shells of this type and somewhat restricted as to what we are able to find locally. The shells were smallish but freshly dead and had perfect protoconchs. At Man of War Bay, I picked up a good Offadesma angasi, quite a treasure!"

Setting out for the north, we called at Te Arai Point -(this, after reading the most interesting article in the Newsletter). This must certainly be a great place after a washup - hundreds of scallops, Penions, Voluts etc, but unfortunately no fresh washup; however, on walking along, I was pleased to pick up my first two Alcithoe fusus haurokiensis, one in excellent condition. The remains of Xenophora neozcalanica were teasing us, but one good small Astrea heliotropium, made our walk well worth while.

To the Far North! - I keenly sought a 'Dawn Murex', Pterotyphis eos eos but to no avail. I tried at Rawhiti, Bay of Islands and at Matauri Bay. Turnable rocks are difficult to find up North - not like the Taranaki coastline at all, but at Rawhiti, I found dead shells of Maurea tigris and one small Maurea osbornei. Along the coast were many small shells of interest and also several perfect, well coloured Longimactra elongata. The odd specimen of Charonia lampas capex and C.l. rubicunda were about in shallow water at low tide.

Tokerau Beach proved worth a visit. Excellent and numerous examples of Alcithoe arabica were there, some large specimens and also a variation with a short spire, like the depressa form but much larger and with a broadly flared aperture. All the specimens washed up had very indistinct nodules and were marked with bands of brown over cream to fawn background. I picked up some of the attractive pink to mauve sea urchins, Trypneustes gratilla, several small Astrea heliotropium and many damaged Xenophora, along with some large Xenophallium pyrum.

Kaimaumau and East Beach - a long stretch of sand indeed, and we had to walk a very long way to find anything, as it had been well picked over from each end but the distant middle section was a delight with good specimens of Penion sulcatus adusta, one good P.s. mandarinoides and Monoplex pathenopus from small hairy specimens to large (4½ inches) - smooth hairless specimens with good aperture and enameled colours. These were up to 100 yards into the sand hills from the beach. Charonia capex were there and also many broken Tonna cerevisina, but to our delight we found an almost whole (one small hole in the top) 7½ inch specimen, the nearest we have been to finding a complete Tonna, yet. Unfortunately, my holidays are at the time of year (March/April) when few washups occur.

Rarawa Beach and Paxton Point - Shells - three feet deep in the gutters between the rocks! I picked up a small Alcithoe jaculoides, another A. fusus haurakiensis, some Muricopsis octogonus, the spiny Murex Poirieria zelandica and the first valves of Cleidothacrus albodus I had seen. Cantharidus opalus and C. purpureus were everywhere. There were masses of juvenile Alcithoe arabica with beautiful markings; some were completely creamy yellow to buff and devoid of any markings - very pretty shells. One even had orange bands. I was following another fossicker round the Point, as the piles of shells had been well sorted through.

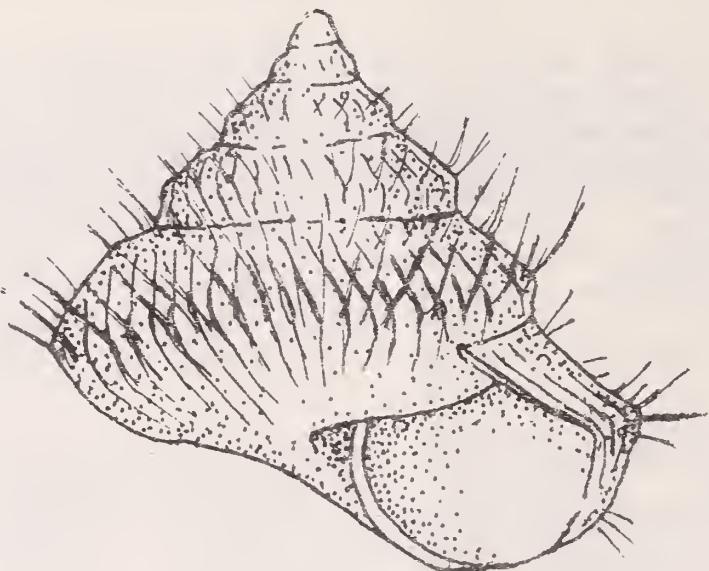
We hiked out to Cape Maria van Dieman and found several beach specimens of Monodilepas diemanensis. At Ruakaka, on the way home, a stop at morning tea time and a walk along the beach, produced a Maurea pellucida, a smallish tallspired form, possibly spirata.

Unfortunately, we did not have time to explore the 90 mile beach and Te Hapua and Paua areas, - next time perhaps. That 'Dawn Murex' is elusive, but I may have been looking in the wrong places and will have to explore further afield another time,

CYTORA HIRSUTISSIMA Powell

This is the largest species of the landsnail genus Cytora -operculate snails which are dispersed quite prolifically through the North Island bush and more sparsely over the South and Stewart Islands.

The attractive and distinctive Cytora hirsutissima, however, is restricted to one small area of Great Island of the Three Kings Group, so must surely qualify as one of our rarest species and for a place on the endangered species list, as well.



Dr. F. Climo, on the National Museum Expedition of 1970, found that this snail is restricted to a small area of about two square metres on the South West coastal slope where it lives under a few large rocks well covered by the fern Arthopteris tenella - and all under a solitary Paratrophis tree.

The body whorl of the shell is biangulate, one angle at the middle of the whorl and the other below the suture. Both angles bear long, hirsute processes those on the middle angle being longer and more erect. Colour, golden brown, processes darker. Cytora hirsutissima is without eyes and it is thought that the long hair like processes may compensate for lack of vision, acting as 'thigmotactic tilt receptors'.

N.W.G.

A WEEK AT HAHEI, COROMANDEL.

M. Proffitt

In January 1980, our family set off for Hahei and with the dingy on the car roof and caravan behind, we struggled over the hills from Thames to the coast on the other side with a few stops to cool the engine and refill the water tank.

By the time we reached Hahei, we had left behind the drizzly rain, and the weather improved. This beach has beautiful white sand and a number of offshore islands, making it very picturesque. The fishing is usually excellent as the Motor Camp has a special place for cleaning fish and the area is nearly always in use with 3 - 6 families filleting their catch by large cratesful at a time. Skin divers are very numerous about the rocks out in the Bay. Whilst out fishing, we had to cut our anchor free and it now lies on the bottom. We found out later that most people 'drift fish' in that area to avoid fouling their anchor. - (Always wiser after the event !)

In the rock pools, were hundreds of hermit crabs and in the sandy shallows a great variety of brightly coloured shells scurried in all directions to shelter under the clumps of seaweed. The crabs' homes consisted of Littorina unifasciata, Cantharidella tesselata, with very brightly coloured patterns from green and yellow through to grey and pinks, Microlenchus dilatatus - multi pinks with white specks and iridescent interior, Microlenchus sanguincus similarly coloured, Herpetopoma bella, Thoristella oppressa, Juv. Cirsotrema zolebori, Zcacumantus subcarinatus, Juv. Cominella virgata with exquisite colour patterns also fresh, well coloured Neogualaeus sinclairi, Rissoina zonata our largest of this genus, R. anguina and R. chathamensis, tiny Eatoniella olivacea on a clump of Novastoa lamellosa and also two shells of the freshwater Melanopsis trifasciata which had probably washed down from the creek, along with Ophicardelus costellarius from the bases of the rushes lining the creek edges.

On the splash zone, the rocks were littered with thousands of the black Nerita melanotragus, Littorina unifasciata, and further down Melaphraphia aethiops, Lepsiella scobina and a number of Notoacmea pileopsis sturnus with the brown interior. This species, I had not seen before. Over at Cathedral Cove, in a small cave, the more common Notoacmea pileopsis pilcopsis were living on the cave roof and being sheltered were quite unblemished. For the first time, I came across Atalacmea fragilis under smooth stones in a shallow pool. There were a large number of juveniles here with the adults.

Each day we collected along the washups where a great number of sea eggs and jelly fish lay amongst the kelp; shells here were Haliotis virginea crispata numerous colours and sizes of Chlamys zelandiae, Paphies ventricosa (everyone dug for these to eat.), Tawera spissa, Protorthaca crassicosta, Cellana radians, Collana stellifera, C. ornata, Diloma bicanaliculata, Trochus viridis, Umbonium Paratrophon quoyi, Cookia sulcata and Trichosirius inornatus, to name a few.

We also picked up a valve of the deep water Notocallista multistrata and our daughter, Gail had a prize find in a live Astrea heliotropium with operculum lying on the soft white sand where, we presumed, it had been dropped by a skin diver. At the other end of the beach many boulders had dropped down over the years, and although the shell life seemed more scarce, we saw many very large crabs basking in the sun on top of the boulders--eyes forever watchful for the slightest movement, at which they would scurry back to the dark crevices.

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HELIX ASPERSA Mull.

This old friend? -or foe!, is still making good progress in its colonization of New Zealand. We heard recently that it has appeared on the Chatham Islands and is apparently becoming well established. The occurrence does not seem to have been recorded, previously.

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Incidentally, we had an inquiry, recently, as to whether we thought that the large succulent European land snail, Helix pomatia, could be imported and bred here for the table. We assured the caller that such a plan would be axed immediately, but we did suggest that he might try Helix aspersa which is used for food elsewhere and abounds in some areas in New Zealand,

I remember, at day-break, one New Year's Day, after a wakeful night's camping at Houhora Heads among myriads of hungry mosquitoes, I took a walk down through the sand dunes to East Beach. The dew was heavy and crawling amongst the Spinifex and other small plants were thousands of superb specimens of Helix aspersa. So, you Gormots, why not try those and so help to keep one pest in check at the same time!

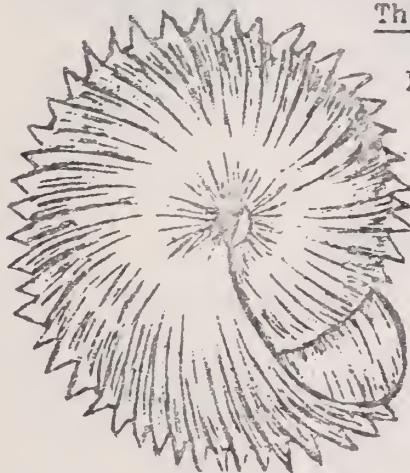
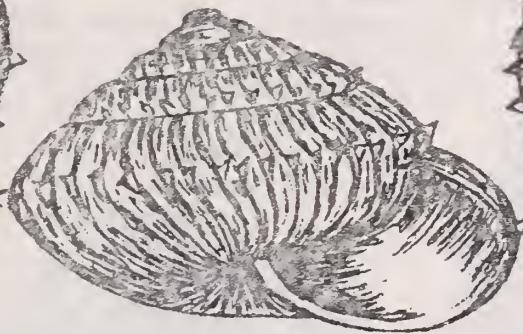
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Species to be found in the Coromandel Range.

J. Goultstone.

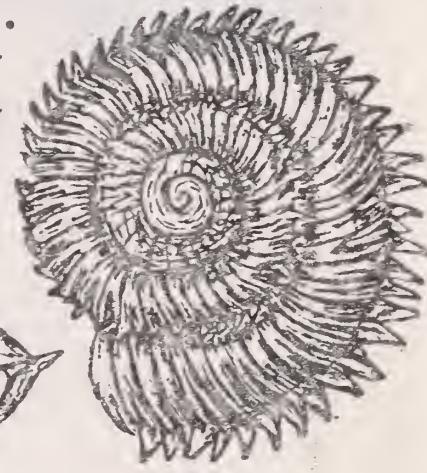


Therasiella celinde (Gray). Not all
that common in
my collecting in Coromandel
 4.0×2.5 mm.



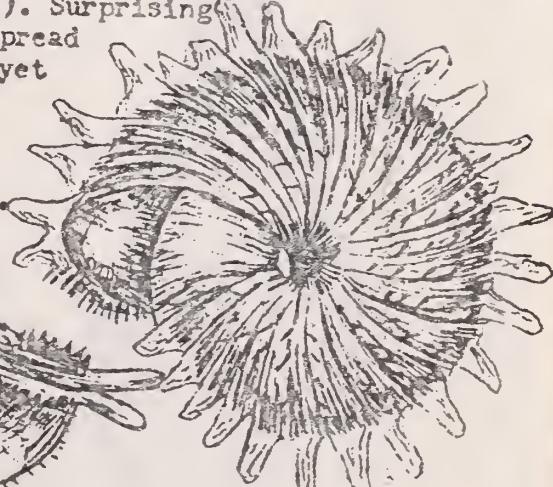
Therasiella neozelanica (Cumber).
This will
probably be the "tamora" of
Adams and Whitten. It is very
common.

Tapu 2.5×1.5 mm.



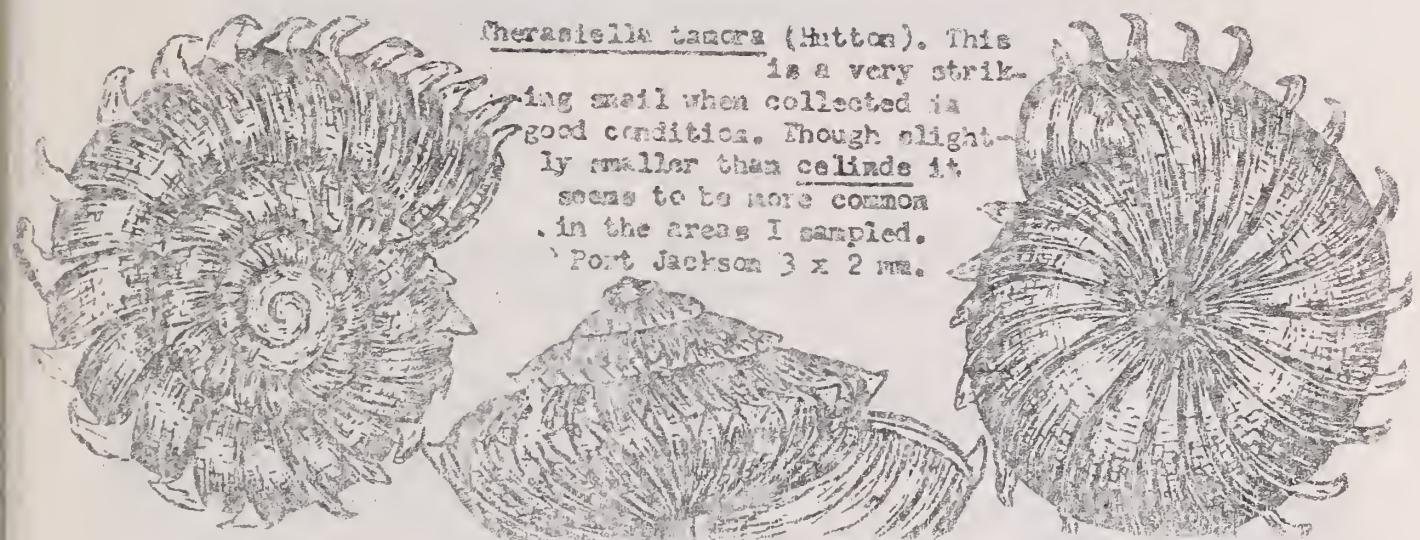
Therasiella serrata (Cumber). Surprisingly widespread
through the Coromandels yet
I haven't seen it at all
in the Hunuas.

Waiwawa Hut 3.2×1.6 mm.





Therasiella tamra (Hutton). This is a very striking snail when collected in good condition. Though slightly smaller than celinda it seems to be more common in the areas I sampled.
Port Jackson 3 x 2 mm.



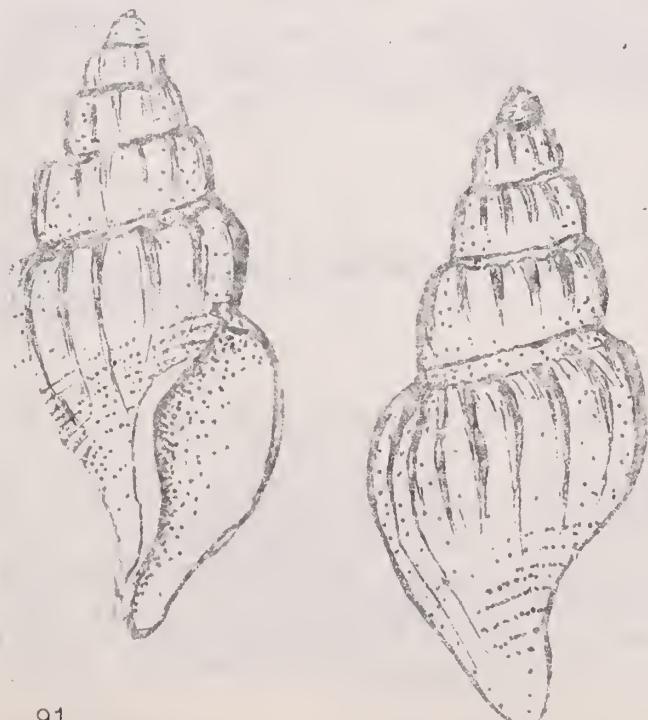
BOREOTROPHON SHIRLEYI Cernohorsky

(See Abstracts of New Papers at back of this issue.)

Recent prawn trawls in the Bay of Plenty, between Mayor & White Islands, resulted in the discovery of this newly described species.

The find is of considerable interest in that it represents a new generic record for New Zealand. Species of Boreotrophon are better known from sub-antarctic waters, and Northern Pacific and North Atlantic Oceans. One species of the genus occurs off South Africa.

The type specimen of 52mm. X 22.3mm is uniformly white, somewhat chalky in texture and with the aperture and columella glossy white. Taken in 366 - 476 metres on mud bottom.



RECENT PUBLICATIONS

The systematic status of some land snails mistakenly assigned to the New Zealand Fauna.

F.M.Climo

National Museum of N.Z.
Wellington.

N.Z.Journal of Zoology Vol.6 (1979);407-410.

Abstract. Helix regularis, Laoma (Phrixgnathus) lucida var. elevata, L.elegans, and Lagochilus studeri, described from "New Zealand" or "Whangarei", have proved to be referable to extralimital species, and should therefore be deleted from the New Zealand fauna. Helix regularis Pfeiffer, 1855 is shown to be a species of Coneuplecta Moellendorff, 1893 (Helicarionidae) closely related to or synonymous with Nanina microconus Mousson, 1865 for which a neotype is selected. Laoma (Phrixgnathus) lucida var. elevata Suter, 1896 is based on juveniles of Euconulus fulvus (Muller, 1774); Laoma elegans Suter, 1896 is Strobilops labyrinthica (Say, 1817); and Lagochilus studeri Suter, 1896 is Amnicola limosa (Say, 1817). The last three are all common in eastern North America.

New Species of Bathyal Gastropods form Australia and New Zealand.

W.O.Cernohorsky

Auckland Institute & Museum.

Rec. Auckland Inst. Mus. 16: 105-108.

Abstract. A species of Peculator (Farvimitra), family Volutimitridae, from South Australia and a species of Boreotrophon, family Muricidae, from the North Island of New Zealand are described as new to science.

The systematic position of Triforis Deshayes (Mollusca; Gastropoda)

B.A.Marshall.

National Museum of N.Z.

Wellington.

New Zealand Journal of Zoology, Vol.7 (1980)85-88

Abstract. The taxonomic history of the genus-group taxa Triforis Deshayes and Triphora Blainville is discussed. Triforis is transferred from Triphoroidea (Hamiglossa) to Cerithiopsoidea (Mesogastropoda) on the basis of the occurrence of taenioglossate dentition in Triforis blacki Marshall. Cerithiellidae Golikov & Starobogatov and Sherborniidae Iredale are reduced to subfamily rank in Triforidae.

The Trochidae and Turbinidae of the Kermadec Ridge
(Mollusca; Gastropoda).

B.A.Marshall
National Museum of N.Z.
Wellington.

New Zealand Journal of Zoology, (1979) Vol.6, 521 -552.

Abstract. Twenty-four trochids and 6 turbinids are recorded from the Kermadec Ridge, north-east of New Zealand. Additional data and new illustrations are provided for certain previously recorded species. The following species are newly recorded:

Euchelus (Herpetopoma) foveolata A.Adams, Calliotropis (Solaricida) infundibulum (Watson), Clanculus (Euclanculus?) persica Habe & Shikama, Calliostoma (Tristichotrochus) sp.cf. tosaensis (Kuroda & Habe), and C.(T.) sp.cf. simplex Schepman.

The following new species are described:

Euchelus (Herpetopoma) pruinosa, Calliotropis blacki, C.eucheloides, C.delli, C.powelli, C.acherontis, C.crystalophorus, Solariella (Microyaza) alabida, S.(M.) dawsoni, S.(M.) hurleyi, Calliostoma (Tristichotrochus) gendalli, Leptothyra kermadecensis, L.benthicola, and Cantrainea inexpectata. Subfamily Angariinae is transferred from Trochidae to Turbinidae. Calliotropis Seguenza and Solariella Wood are discussed in some detail. The following genus-group taxa are considered synonymous: Mazastele Iredale and Adamsenida Habe with Calliotropis; Ethaliopsis Schepman and Archiminolia Iredale with Microgaza Dall; and Talopena Iredale with Monilea Swainson. Preliminary remarks pertain to zoogeography, fossils, and the environment.

Editors:

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AUCKLAND INSTITUTE & MUSEUM

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THE PTEROTYPHIS EOS EOS (Hutton) WASH-UP AT PAIHIA IN 1969.

R.A.Cumber

A number of us will recall vividly the welcome wash-up of P.eos eos, which occurred at Paihia in the Bay of Islands in 1969. For me it was particularly interesting, for in the early 1930's I spent many hours on the Islands which face Paihia, looking for this rare pink Muricid. My total bag, after about three years of intermittent searchings was seven specimens. Two of these were in reasonable shape, and they undoubtedly took pride of place in my collection.

During the school holidays in May 1969, we were staying at our bach in the Bay, and enjoying trips to the Islands as weather permitted. Obviously there had been fairly rough weather prior to our arrival, for most beaches showed considerably more shell and seaweed than was usual. I landed Daph. and our son Martin on the Island nearest Waitangi so that they could fossick. I remained on our runabout to fiddle, as boaties are inclined to do when they feel lazy. About half an hour later, they returned - Daph had a number of shells, and greeted me with "Is this the pink shell you used to look for?" That put an end to the lazing about!

Needless to say, we collected "Pterenotus" whenever the opportunities allowed during the rest of 1969. The original numbers which we encountered dwindled quickly, but as the beach shell moved, odd specimens continued to appear for quite a long while. Collecting at one stage became a scoring game, and Martin assures me that on one occasion the score was 66 to 65 for the afternoon's catch. Many of the specimens were worn, and there were many broken pieces. The complete range in size was present, but of course, in the early days one collected the obvious specimens.

To this day, however, despite searchings at very low tides, a living shell, or even one with a trace of animal within it, has not been seen in this area. The numbers of Pterotyphis to be found now have returned almost to that which I know back in 1935. My collection has understandably been depleted somewhat since 1969, but Martin's remains as a "random" sample from this once-in-a-life-time experience.

On many occasions we have pondered this strange wash-up. I am not certain of the interval between the storm and our finding of the shells, but as already mentioned, there must have been some very severe weather. It is true that the fresh-water dilution of the waters in the Bay was becoming more severe over the years due to the removal of land cover in the surrounding country. Increasingly, the prolonged heavy rains were being followed by considerable death of species such as Scutus, so we may have witnessed the breach of tolerance in Pterotyphis. There is however, another possible factor which could throw some light on the wash-up. Apparently, the channel to Opua was dredged some time previously, and the spoil may have been dumped out near the Brampton Reef. The exact dates and site of the dumpings have not been determined, but it is possible that sediments destroyed colonies of Pterotyphis and attendant species, and that the subsequent rough weather brought the shells ashore. It is hoped, of course, that a freak set of storm conditions caused only a temporary reduction in their numbers, but it may be straining optimism somewhat.

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BUCCINULUM COLENZOI (Suter)

G.A. Foreman

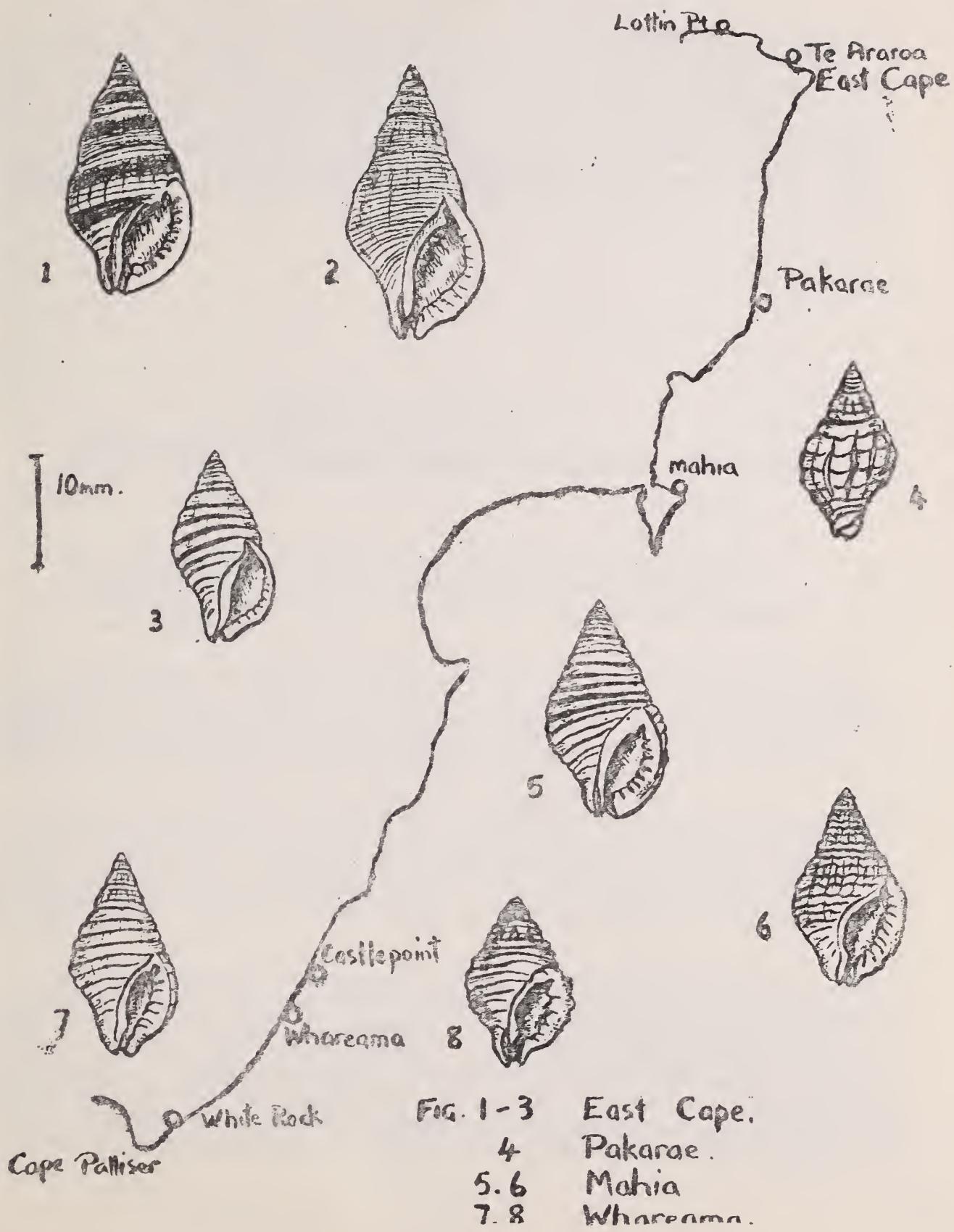
This small member of the genus Buccinulum is restricted to the East Coast of the North Island from Te Araroa, 18km. west of East Cape, south, to the Wairarapa

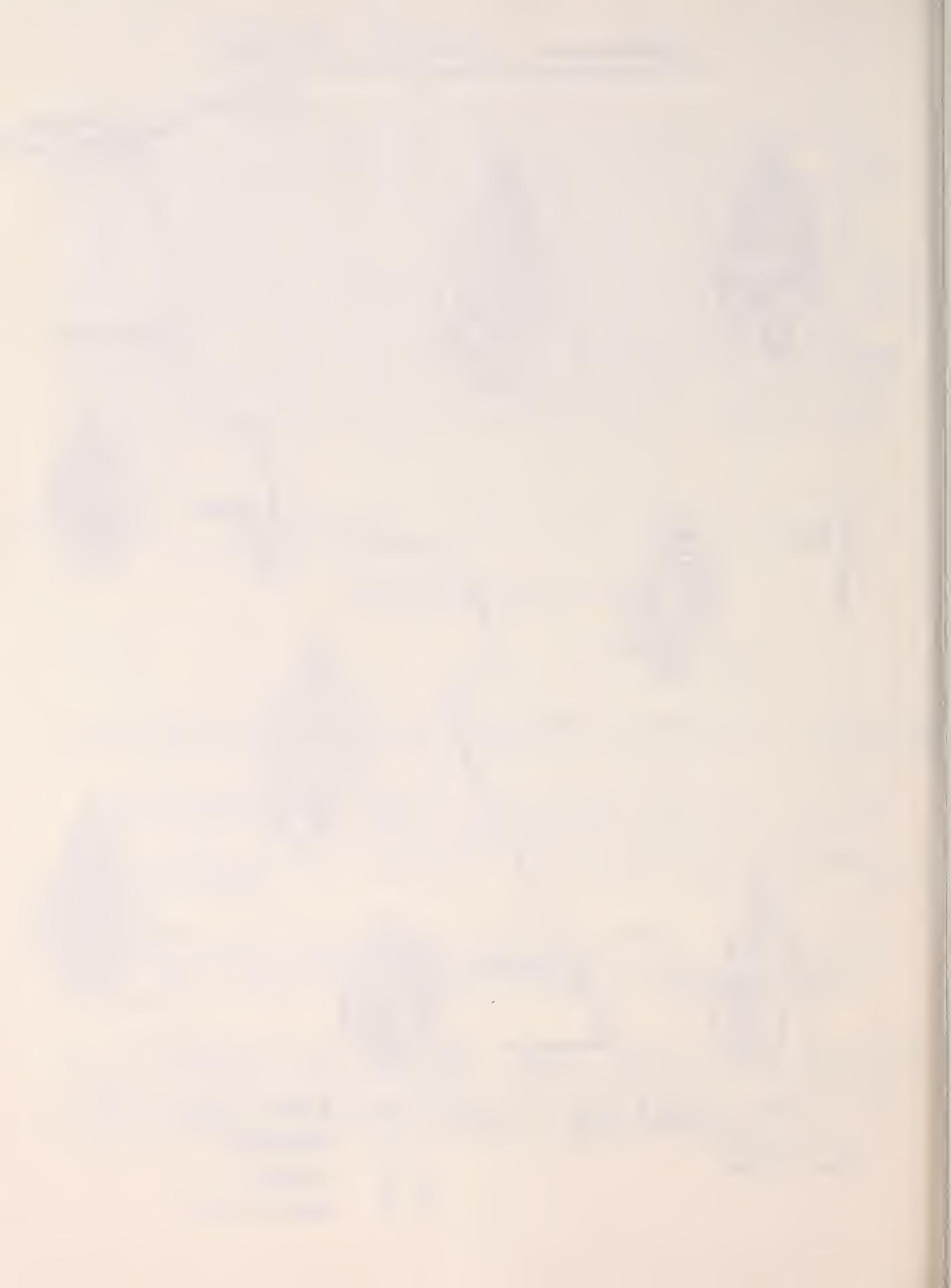
The northern limit is well defined at Te Araroa, with the first sign of Buccinulum colensoi (Suter) being on the papa reef to the east of the township. To the west of the town a long beach separates the East Coast papa rock from the volcanic rock of Matakaeo and Lottin Point where Buccinulum vittatum vittatum (Quoy & Gaimard) now takes the place of B. colensoi of which there is no sign.

The southern boundary is more difficult to define. I have found B. colensoi, plentiful at Whareama 20km. south of Castlepoint, but not a sign of it at White Rock, 20 km. north of Cape Palliser, where Buccinulum vittatum littorinoides (Reeve) can now be seen.

B. colensoi is quite easy to find throughout its range, living under rocks in the region of low water and below. Empty shells are a favourite home of hermit crabs and dozens may sometimes be seen scuttling across the flat reef surface when covered by only a few inches of water, or huddled together under the large flat rocks which are left high and dry when the tide recedes.

BUCINULUM COLENSOI (SUTER)





Though variable in sculpture, size and colour, B.colensoi is usually an easy shell to distinguish throughout its range. In the TeAraroa - East Cape region, I have found a number of shells which resemble B.vittatum in some features. They are shells with a tall spire, with weak and narrow spirals and colour banding similar to B.vittatum. The grey background colouring of the shell, white aperture and apertural features are as found in typical B.colensoi and the closely related B.vittatum which does occur nearby. It certainly helps to make this an interesting little shell.

- 00 -

SUN, SEA AIR, and SHELLING

Recollections of Aitutaki and Rarotonga - Sept. 21 - Oct. 6, 1980.

C. Grange.

" The deep and abiding appeal of the Cook Islands is unique. For here is to be found a wonderfully rewarding holiday experience, a special kind of unspoiled and unhurried pleasure and contentment -----"

This is what the travel brochure promised, and this indeed is what was found by the ten Club members who set out from Auckland on September 21st. for Rarotonga. The group ranged from first time flyers to somewhat more seasoned travellers and all banded together extremely well with the common goal of hunting for, and finding some good shells to bring home.

We arrived at Rarotonga Air Port to blue skies and steamy hot conditions - a welcome change from the prevailing wet of Auckland. Bustled immediately onto the tiny Britten - Norman Islander plane, we were soon approaching the beautiful turquoise lagoon, dotted with its 15 Motus (Small islands) and surrounded by a thin line of white surf. This was Aitutaki - our home for the next twelve days.

Within minutes, it seemed, we had been transported from the airport to the Rapae Motel and were soon all wading around in the shallows of the lagoon and beachcombing for any available treasures. Rhinoclavis asper was immediately seen to be the most predominant species - along with the black holothurian Leucospilota. Strombus gibberulus were crawling on the sand among the green weed at low tide mark but as most of us were still waiting for our baggage with our shelling gear to arrive from Rarotonga, we were unable to fossick further out onto the coral, until next day. However, Derek Lamb returned from his walk with

a magnificent live specimen of Polinices melanostomoides. All in all, it was an afternoon full of promises of what was to come. At a quick count later that evening, we reckoned on 31 different species having been seen by the group.

Day 2 dawned with heavy rain and temperatures far below those expected on a tropical coral atoll. However, with raincoats and hats being the order of the day, off we set. With the low tide occurring later in the afternoon, the morning was spent exploring the shallows at the edge of the lagoon. Tiny coral fish, brilliant in colours and shape, darted in and out of the coral outcrops, each of these being aglow with the varied mantles of the small clams (Tridacna maxima), in colours ranging from pale beige, through orange, pink, green, blue and black, - very spectacular. These coral outcrops, we discovered, were the homes of Latirus nodatus, somewhat encrusted but specimens collected have been cleaned up to expose beautiful shells with fine pink apertures. The morning also provided the first live examples of Conus and Cypraea - Conus ebraeus C. chaldaeus, C. flavidus and Cypraea moneta, Conus ebraeus, C. annulus, and C. caputserpentis. By the afternoon, the rain had disappeared and we eagerly set off towards the outer reef. With the tide not dropping as low as we had hoped, and a strong wind rippling the water, collecting was indeed difficult - but fine examples of Conus flavidus, Coralliophila violacea, Turbo argyrostomus to name but a few, were found.

That evening, we were treated to a beach barbecue à la Rapae Motel, - our first opportunity to sample some of the local fruits; Pawpaw, pineapple, banana, breadfruit, yam, taro and coconut were on the menu along with barbecued fish and steak. A pleasant end to any day.

The remainder of our 10 days on Aitutaki was spent in a similar way, working our main collecting around the low tides and passing the rest of the time exploring the Island. Aitutaki is part volcanic and part atoll, covering some 4,461 acres, with a population of about 2,500, - much of which is, in fact, in New Zealand. It is moderately flat, rising to 390 feet at its highest point - a walk to the top of which, provided an excellent view over the 9 mile long lagoon and its 14 other Motus. The main Island is extremely fertile, and large plantations of bananas, oranges, breadfruit, mangoes, arrowroot and coconuts are thriving well. The walk from the Motel into the main village of Arutanga is along a coral-stone road lined with frangipani, hibiscus and gardens full of plants we delicately nurse indoors here in New Zealand.

The majority of our collecting was done within walking distance of the Motel, but two good afternoons were spent around on the eastern side of the Airport. This is the more exposed side and the point where the outer reef is closest to the shore. This was where we were told the shells would be - and we weren't disappointed. A large amount of material was found washed up, but once again, the tide did not allow us to get out as far as we would have liked to enable us to see these specimens alive; however, among the more exciting live species were, Cypraea maculifera and C. caputserpentis, Tectarius grandinatus and Drupina grossularia. Only on our last day when we were at the Airport for our

flight back to Rarotonga, did we see the tide well out to expose the reef we had so hoped to explore - maybe next time !

On two separate days, we hired the services of local boatowner 'Sam', who transported us out over the lagoon to the outer Motus in his 16 foot fibreglass boat. On the first day, we visited Ropata, a tiny Motu, uninhabited as are they all, and waded from the boat through absolutely crystal clear water to see what we could find. The marine life was amazingly barren, but Doug Snook discovered not one, but two beautiful large specimens of Cypraea tigris. From here we wove our way through the coral outcrops to the beautiful island of Tapuaetai or One Foot Island, as it is called by the locals. This held promise of good collecting on large sand flats - but these were found to be the home of ceriths, ceriths and more ceriths - with very little else! However a hunt around the rocky ground and a walk right to the outer reef uncovered many fine species including Conus pulicarius, Mitra stictica, Cymatium nicobaricum and a huge encrusted tube worm Vermetus maximus. We also found washed up Tonna perdix, Terebra maculata, Janthina violacea and Melampus flavus,

On another day we visited the island of Akaiami, once used as a stopover by the flying boats. The notable find here was the abundant communities of Tectarius grandinatus, particularly fine, large, well-spined specimens. Olive Snook was lucky enough to find a beautiful Cypraea tigris, not on the reef as one would expect, but up in a tree where it had obviously been forgotten by some previous visitor.

Days passed by so quickly - each providing its own treasure for each one of us. Perhaps the most favoured pastime became the searching for, and investigation of trails in the sand - the hunt for the elusive Terebra subulata first uncovered by our President, Bob Grange. Much searching, digging, disappointed sighs and delighted squeals later - and a total of four beautiful examples were in the possession of the proud owners.

All too quickly, our departure morning arrived, and we said our farewells to the management and staff of the Rapae Motel. The friendliness, helpfulness and general hospitality of the people of Aitutaki will be remembered always.

Rarotonga Airport, busy traffic and Duty Free shops, meant a sudden 'Back to Civilization' awakening call! Once moved into our new accomodation at the Aorangi Beach Motels, it wasn't long before the beach in front of our units had been scoured by 10 pairs of intent eyes. Not exactly a fruitless pastime either! After two days we had established a sizeable list of beach collected species including Vanikoro cancellata, Polinices melanostomoides, Conus catus, C. rat, Philippia radiata, Astrea rhodostoma, Natica gualtheriana, Tonna perdix and a fine Mitra papalis found by Rene Kindleysides. One morning was spent turning rocks on the exposed reef near the Airport where we found live Conus catus, C. ratus, Vanikoro cancellata and the large bivalve Periglypta pourpura, to name a few.

October 5th dawned and it was home to Auckland for all of us, armed with a good variety of species - some rare, some not - but each with a special appeal to its collector. A total of about 150 species was found by the group. (A full list of species will be available shortly).

ONEROA, WAIHEKE ID.

M. Morley

Auckland shelling enthusiasts usually head to their favourite beaches in the North. More locally, Waiheke can prove rewarding, if less spectacular. Oneroa has a half kilometre of sand, where northerly winds can produce a considerable surf. The eastern end is separated from Little Oneroa by a rocky area, while the western end has a sheltered hook with fine sand and sediment. I have collected in this area for the last five years.

After strong north east winds, the following shells can be found (sometimes!)

| | |
|--------------------------------------|--|
| <u>Alcithoe arabica</u> | <u>Alcithoe fusus haurakiensis</u> |
| <u>Longimactra elongata</u> | <u>Penion sulcatus</u> |
| <u>Gari hodgi</u> | <u>Scalpomactra scalpellum</u> - 1 pair. alive |
| <u>Tellina huttoni</u> - in pairs | <u>Divaricella huttoniana</u> - in pairs |
| <u>Poiricria zelandica</u> - 1 | <u>Pupa kirki</u> |
| <u>Phenatoma rosca</u> - alive | <u>Phenatoma zelandica</u> |
| <u>Antimelatoma buchanani</u> maorum | - alive |

The intertidal rocky area supports Limatula orientalis, Scutus breviculus, and Cabestana spengleri. The latter are few in number and in a restricted area. They are for viewing only

At low tides, a fluctuating population of hermit crabs, is exposed. Ninety per cent of the shells are Umboonium zelandicum but a careful house inspection reveals,

| | |
|-------------------------------|-------------------------|
| <u>Trichosirius inornatus</u> | <u>Xymene gouldi</u> |
| <u>Cirsotrema zelobori</u> | <u>Maurea pollucida</u> |

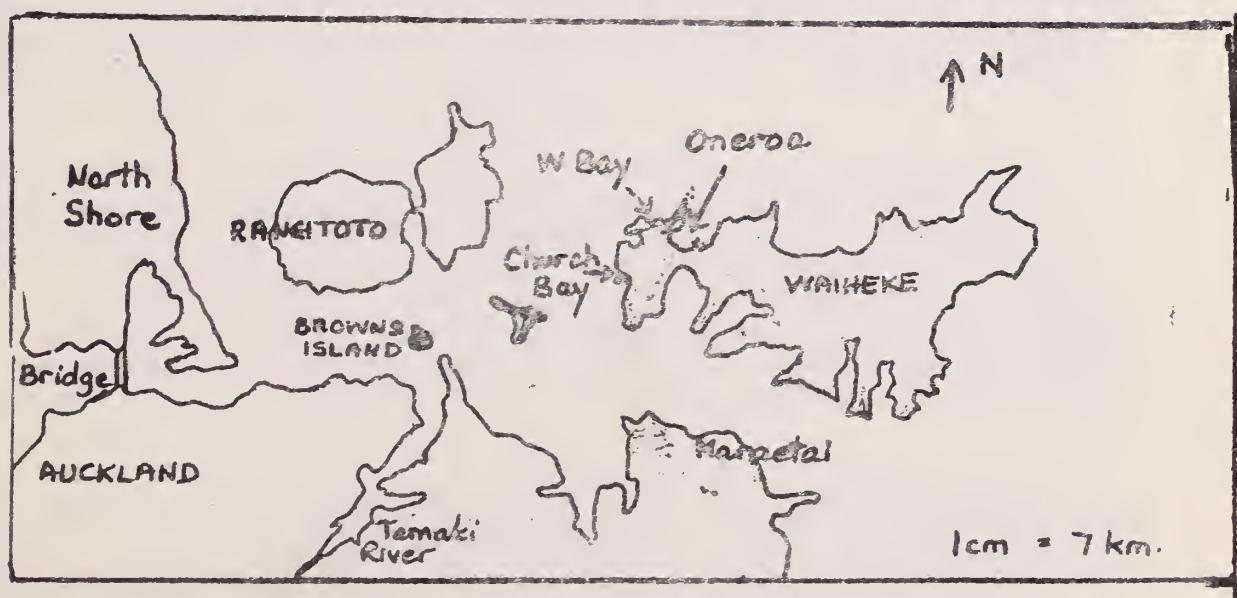
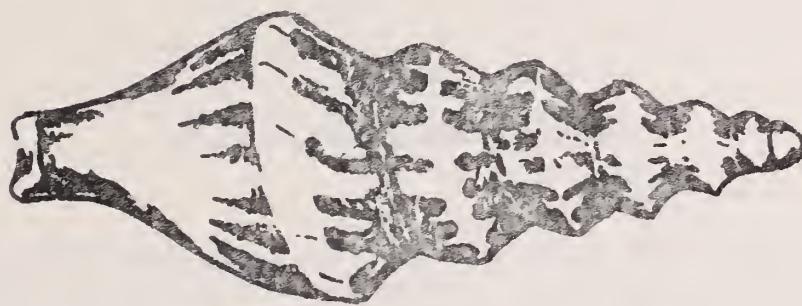
Washups at the sheltered end are unpredictable. Frequently, the beach is devoid of shells, though a Tui provides a consolation solo. In Spring, the gold of Kowhai trees is drama against the dark bush. At other times, there several rows of small shells necessitating what my children term a "grain by grain" search! These washups can provide; -

| | |
|---------------------------|---|
| <u>Siliquaria weldii</u> | <u>Bassina yatei</u> - good specimens, in pairs |
| <u>Tanea zelandica</u> | <u>Epitonium tenellum</u> |
| <u>Epitonium minor</u> | <u>Janthina exigua</u> |
| <u>Lamellaria ophione</u> | <u>Myllita stowei</u> |
| <u>Offadesma angasi</u> | <u>Maurca selecta</u> - 1 battered specimen |
| | <u>Dosinia maoriana</u> |

A surprise find was Rhytidia greenwoodi greenwoodi - presumably, there is a colony up in the bush area nearby.

In 1975 heavy rains washed away 1½ metres depth of sand to reveal a substrate with fossils. There are also fossil areas to the west at W. Bay.

Antimelatoma buchanani maorum



and Church Bay. W. Bay at low tide is interesting with a variety of fine nudibranchs. It also has sea cucumbers Stichopus mollis, wandering sea anemones - Phlyctenactis tuberculosa, cushion star fish Stegnaster inflatus in vivid hues of orange, green, purple and pillar box red. The large purple and white anemones Isocradactus magna and cup corals Flabellum ruguiosum add to the rich display of colours. Occasionally, squid, octopuses and sea horses have been seen,

For the sea-food gourmets, Oneroa offers Pecten novaezelandiae, Dominia anus, Paphies subtriangulatum, P. australe or Chione stutchburyi, Shortly, I hope to improve my collection by obtaining dredged material.

So, when the oil runs out, you could consider a trip to Waiheke Island!

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DIVING AT POOR KNIGHTS ISLANDS

T. Cunningham

Queen's Birthday Weekend - and it was 'up early', after travelling by night to Tutukaka, about 25 km. from Whangarei. We were soon off for the two hour boat ride in the Lady Jess, to the Poor Knights Is., the Middle Arch, where we had our first dive.

Descending to a depth of 70ft., we found the visibility to be an incredible 100ft. plus. The water was at first cool but soon warmed in the thick wetsuit. After 45 minutes, I had collected only one shell, - a broken Xenophalium royanum, found loose on a boulder bottom at the base of a cliff. Although missing its spire the length is 110mm. and width 93mm.

The next stop was Kahawai Point for a 30 minute dive to 50 ft. and here my only success was a Turritriton tabulatus exaratus - again, a worn shell. The final dive of the day was at the Sugarloaf, a large rock emerging from 400 ft. The treeless outcrop is covered with the droppings from a large gannet colony, hence the name. There was a heavy swell running and the surge at 50ft. was bad. I found no shells but succeeded in catching two crayfish. Looking for shells is a difficult thing to do at this island; the sponges, algae, seaweeds and corals cover every inch of rock so that amid the blaxing colours, shells are lost.

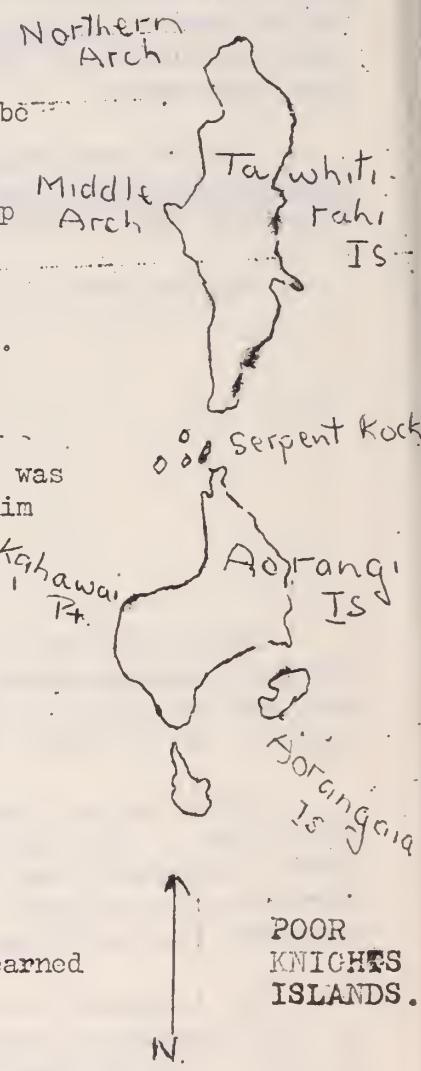
The next day saw the first dive at Aorangaia Is. The only shells seen here were heavily encrusted Morula chaidea. The second dive was planned for Serpent Rock but along the way we encountered a school of hundreds of dolphins, so it was a quick scramble over the side to get an undersea view of

these incredible creatures. For over an hour we swam, dived and played with the dolphins, managing to get about four feet from them before they would turn. After the dolphin finally moved on, a tired boatload of happy divers clambered aboard. Having seen the bottom from the top (surface), we asked the Captain for a depth sounding; the reply was an incredible 240ft.!

The third and final dive of the day was at the Northern Arch for a 50mim. dive to 40ft. The only two shells to be seen alive were two Morula, one chaidea and one palmeri both in excellent condition. It was a fun trip back to the mainland with the Captain falling asleep at the wheel three times!

Dawn of the final day was clear in contrast to the previous two days. The first dive was at the Pinnacles. I had reached the conclusion that after two days of such good luck with shells, I would come away empty handed but fortunately I was wrong. After being distracted for some time by a Moray eel, I looked across to my buddy who was now about 60ft. away, so I swam quickly to catch up with him while glancing into cracks and caves for shells or crayfish. To my astonishment, sitting in a small hole was a cowrie - Lyncina vitellus! I plucked it out and having caught up to my buddy, put the shell into a glove for safe keeping. Needless to say, I looked into every other crack I could find; nothing was to be found until I came across a hole bristling with feelers - crayfish, - big ones. After a long struggle, I had bagged three and my air was getting low, so it was time to surface. Back on board the boat I showed my buddy what I had found and he said, "Oh, those are quite rare. I have found only 11 since I have been diving here". On further questioning, I learned that once he had seen six live and five freshly dead Lyncina vitellus in one cave. He took only the dead specimens. Since then, he had taken six others from different locations around the Poor Knights - three alive. We stayed at the same location for the next dive and this was the only one during the weekend when I came up empty handed.

The final dive for the weekend was back at the Sugarloaf. Again, there was a bad surge and apart from getting myself temporarily stuck in a hole, while looking for crayfish, the only interesting things to be found were two shells of Waimatea obscura, one brown and one orange, both complete with pink protoconchs - a nice way to end the highly interesting weekend.



• 0 The Pinnacles

• Sugarloaf Rock.

ITEMS of INTEREST

Living Cyclomactra tristis at Foxton - N.Douglas

In the afternoon of 26th April, 1980, George Rigden and I walked along the high tide line for about half a mile northward at Foxton Beach. Some of the shells we saw cast ashore were as follows; tuatua, both the southern form and the northern, but the southern larger and more plentiful. One whole Toheroa was ashore and both Dosinia anus and Spisula aequilateralis were there in hundreds. Both Mactra discors and Mactra murchisoni were washed up and, a big surprise, Cyclomactra tristis in good condition (valves joined).

The question then arose - where had these come from? Were they living in the ocean beach and in the surf? It seemed most unlikely, yet here they were, and fresh! After giving the mattersome thought, we desided to back track and investigate the Manawatu River which discharges into the sea at about one mile south of our position. On the west side of the boat ramp in the river, a black mud area was noted. Here we found that the recent flood had washed away the river bank and with it, the Cyclomactra tristis. We found them there in good numbers, both dead and alive. The shells measured up to 70mm. in length.

The Vanishing Sea Anemones - Jacqui Forbes (junior member)

One day Mrs. Douglas put us off at Kariotahi Gap, a party of four - Mum, Michell, Mr. Douglas and me. We walked about $\frac{3}{4}$ km. to the Sea Anemone's cave. There were large green, white, and purple sea anemones. When Mr. Douglas went back to have a look three weeks later, the anemones had vanished. Some time later a storm came and covered the area where the anemones had been but about a month later the sand was washed away again and the sea anemones had appeared again.

Thais orbita - from Gwenda Henderson

These shells have always interested me but I have not been able to get very much information on them, probably because they are so common. As far as I can see, the round smooth ones and the tall coarse ones do live together (Tutukaka, Whangaruru Harbour and Coopers Beach); but the spiral cords may not be as coarse as the coarsest ones. It seems, the more brown colour the smoother the sculpture and the smaller the adult shell, but even this does not always apply.

In April 1978, I was shell collecting north of Whangaruru South, on the Whangaruru Harbour and came across a large colony of Thais orbita. There were hundreds all crowded on the rocks for about 15 to 20 metres. As I went further up harbour they dwindled out to an average of half a dozen, mostly full adults under ledges etc. The colony contained juveniles of 20mm. to adults 80mm. of the coarse sculptured tall form, pure white in colour, and

juveniles of 20mm. to adults 50mm of the rounded form, smooth sculptured and chocolate brown in colour along with all the in between sizes and shades of brown to golden cream, including some mottled and speckled. Only the coarse white (no brown, even on protoconch) were larger than 50mm. and the majority of the smaller specimens had some brown in them. I do not know if they are there permanently as I had not searched that area before nor have I been back again. This was the first time I had ever seen a colony of brown T. orbita like this before - only shells washed up on ocean beaches. There were barnacles on the rocks but no sign of mussels. The rocks were fairly bare and shells very clean. The area is exposed to the north. I collected 30 shells to cover as wide a range of colour, sculpture and size as possible. It did not seem that environment or food could be responsible for the different sizes, sculpture or colour in this one colony.

(Large colonies of brown and mottled examples occur at Maori Bay, Muriwai West Coast, Auckland; Perhaps members could let Mrs. Henderson know of their own observations on this species. Ed.)

A Visit to Rat Tail Reef, Suva, Fiji Is. - Jean Burgess

My friend, Heather Roylance, of the Fiji Shell Club, invited me to join the club members on a visit to Josko's Reef. We arrived at Tradewinds Hotel, our departure point, just before 11.30am. and boarded the 'Sundowner', a 27ft. high speed diesel launch used mostly for diving groups.

Josko's Reef, the venue for the day is known as the best 'Cowrie' reef close to Suva but high winds the night before made the conditions outside the reef too rough, so it was decided to go to Rat Tail reef instead. This lies outside the harbour entrance and after eating a hurried lunch and donning our shelling gear, we reached our destination; - the assembled company dressed in the latest sheller's fashion gear - reef boots, long socks, short shorts, hats and sunglasses and clutching buckets, crowbars, prodders, knives etc, were ferried to the reef in a punt in relays. We stopped about 15 yds. from the shore and then it was 'over the side', up to our waists in water and a wade through the coral to the shore. Heather, our leader set up the flag close to the boat and announced that leaving time was 3p.m.

Everyone hurried away to search, keeping as far as possible from each other in order not to turn the same rock over twice. My progress was very slow. I was fascinated by the bright little fish in the sandy pools, the water gushing through the channels in the reef, the many coloured coral forms and above all, the glorious peace of the reef with the warm wind sun bathing us all.

Heather was knee deep in water searching for tiny elusive 'Cowries' which

requires good eyesight and patience. She was rewarded by finding several ~~new~~ species, new to her collection. The hours passed only too quickly and soon we heard the whistle recalling us to the flag marker.

Plodding figures with buckets and plastic bags of 'Goodies', converged on the flag and in a short time the punt ferried us all back to the boat. I had found about a dozen Cypraea carneola, cribraria, teres and one isabella. I picked up a number of Cones, mostly tulipa, textile and marmoreus. My nicest find was a beautiful fluted clam, Tridacna maxima, only 4 inches long and a delicate clear yellow in colour. This was voted the 'shell of the day'. On the trip back we ate the rest of our food, ravenously, I must confess and then showed off our treasures to each other. Although I did not find my elusive 'Golden Cowrie' (Cypraea aurantium), I have a wonderful few hours to remember when I return home to New Zealand.

How often are the beaches of the far North quite bare ! Andrew Spurgeon, a Junior member from Whangarei had sharp eyes when he was up North during the May holidays and sent in the following list of shells collected;

Spirits Bay; Agnewia tritoniformis; Morula smithi
Cominella virgata brookesi Janthina globosa
Latia neritoides Succinna archeyi
Anadara trapezia (sub fossil)

Te Huka, west of Tom Bowling Bay;

Maurea punctulata Janthina violacea & exigua
Muricopsis espinosus marijan Melanopsis trifasciata

Cape Maria Van Diemen;

| | |
|---------------------------------|---|
| <u>Monodilaspas diemenensis</u> | <u>Janthina globosa</u> & <u>violacea</u> |
| <u>Sigapatella surpestes</u> | <u>Zegalerus terraenovae</u> |
| <u>Astrea heliotropium</u> | <u>Notoacmea pileopsis</u> <u>cellanoides</u> |
| <u>Gadinalia conica</u> | <u>Duplicaria flexicostata</u> |
| <u>Gomphina maorum</u> | <u>Venericardia reinga</u> |
| <u>Acar sandersonae</u> | <u>Cardita brookesi</u> & <u>aoteana</u> |
| <u>Tawera spissa</u> | <u>Talabrida bellula</u> (4 half valves) |
| <u>Rhytidia duplicata</u> | |

Surville Cliffs; (Land snails)

| | |
|-----------------------------|-------------------------------|
| <u>Delos cordelia</u> | |
| <u>Liarea aupouria tara</u> | <u>Phenacohelix tholoides</u> |
| | <u>Cyrtula pallida</u> |

Mt. Umuwhao; (Land snails)

| | |
|--------------------|---------------------------------|
| <u>Serpho kivi</u> | <u>Cyrtula ampla</u> |
| | <u>Liarea aupouria aupouria</u> |

I also found a few species of Placostylus snails and some other shells that I have not identified, yet.

NOTES FROM KAIKOURA

B. Elliott

Having covered Kaikoura's two most interesting groups of shells, the Limpets and the Chitons, in previous articles, I now turn to some of the other species that can be found in this area.

First of all, Land Snails. Kaikoura is the home of Wainuia fallai, which is widespread in this district and beyond. If W.edwardi (Suter) and W.fallai Powell are the same (and I cannot tell the difference), they range at least from Ashley Gorge in the south, to Ward in the north, a distance of about 140 miles, with Mt. Fyffe at Kaikoura being the most well known locality for them.

Roughly speaking, W.edwardi is found more to the south and grows to a larger size, but in reality this does not work out, for my largest one is from Ward in the north (35mm), with several examples from Mt. Fyffe only a millimetre or two smaller, while my largest one from Ashley Gorge in the south, is a mere 25mm. Mt. Fyffe, type locality for the 'smaller' fallai, gets the prize for the largest specimen of all, a magnificent 39mm. snail picked up by friends of mine - talk about beginner's luck! Wainuia fallai is found on Mt. Fyffe from the lower bushline about 700ft. to above Mt. Fyffe Hut at 4000ft.

Rhytida c.f.stephenensis Powell, is found on the Kaikoura coast from Blue Duck Creek to Waipapa Bay, but R.meesoni (perampla?) is rare in this area, two specimens being found along with Wainuias on Mt. Fyffe, and several at Mason River on the road from Kaikoura to Waiau, some 35 miles from Kaikoura.

Here on Kaikoura peninsula, our old enemy Helix aspersa is common, along with the smaller introduced Helicella caperata. With native bush limited to three tiny remnants at the tip of the Peninsula, it is not surprising that small native snails are scarce, and extensive searching has revealed only a dozen or so species.

Shell-sand gathered on the Peninsula has yielded, among other species, Nozcbia emarginata, Zaclys sarissa, Dolicrossa vesca (one), Marginella cairoma, Liracraea crenulata, Chennitzia zelandica, Austrosarepta trapezina, Costokidderia lyallensis, Verticipronus mytilus and Notoclepton sanguineum; also numerous Leuconopsis obsoleta and Suterilla neozelanica, two high tidal species which should be easy to find alive, but have proved annoyingly elusive. Under low tidal rocks are Thoristella chathamensis cookiana, Herpetopoma bella, and pure white Buccinulum kaikouraense. Two larger Buccinulum species inhabit rock crevices at extreme low tide, the whitish pallidum, and striped sufflatum decoratum. Melaphria aethiops are common on intertidal rocks, fine large specimens often growing to 30mm. A single Nerita melanotragus found alive on the south side of the Peninsula, is probably a southern record for this species.

For the collector who likes a good meal after a hard day's sholling, there are magnificent Haliotis iris up to 6½ inches in length, at extreme low tide in rocky areas. At least, there used to be. Nowadays, the ever -



NATURAL SIZE

202 X 91 MM

PENION ORMESI

EEP WATER OFF KAIKOURA

MODIOLUS
AREOLATUS

IN KELP HOLD EAST

WASHED ASHORE

AT SOUTH BAY,

KAIKOURA

SIZE 102 X 59 MM

SIZE 51 X 39 MM

TETHYS BRUNNEA

SOUTH BAY, KAIKOURA

increasing number of commercial paua divers, are taking a toll of this species. Another species that suffers at their hands is the common Sea Urchin, Echinus chloroticus. One sometimes finds piles of these smashed to pieces on the rocks. However I have managed to find two beautiful specimens fully seven inches across, which I have preserved for my collection. The smaller and rarer Pseudechinus sp, found occasionally in rock crevices at low tide, grows to only two inches and is not likely to be disturbed.

My known ledge of deepwater shells from Kaikoura is limited. I have had some very promising contacts among the local fishermen but nothing came of it. Deep water shells from off Kaikoura (not all represented in my own collection) include Ostrea angasi, Tahunanua alta, Chlamys delicatula, Astraea heliotropium, Maurea tigris, M. pellucida, Xenophallium pyrum, Struthiolaria papulosa, Austrofusus glans, A. chathameensis, Fusitriton laudandum, Coluzea spiralis, Poirieria zelandica, Penion ormesi, Alcithoe arabica, A. calva, Iredalina aurantia, Phenatoma rosea. Recently one of the fishermen did keep his promise, and presented me with a bag of 16 live taken Fusitriton and a magnificent Antlered Crab, Latreillopsis petterdi. After four years of disappointments, I was overwhelmed that this new contact should be so generous. And that crab measures 25 inches across with its legs outspread! Other deep water crabs found off Kaikoura are Leptomithrax longimanus, Naxia huttoni and Petalomera wilsoni. Bits of these sometimes wash ashore. Occasional small juveniles of L. longimanus are found under low tidal rocks, but in deep water, they grow to a large size - the one I have would be 15 inches if its legs were fully extended. Among the two dozen or so species of crabs found around the Peninsula are the three species of half-crab, Petrolisthes, which have only three pairs of legs instead of four as in other crabs. P. elongatus is common under intertidal rocks, as it is throughout New Zealand, and the rare P. spinosus and tiny P. novaczelandiae can be found under extreme low tidal rocks. The lobster krill, Munida gregaria washes ashore from time to time, sometimes in quantities. Sometimes the sea takes on a pinkish hue, when viewed from our home on top of the Peninsula and we believe that this may be because vast quantities of Krill are present. Exploring under a boat-shed, south of Kaikoura, I was thrilled to find that a fisherman had dumped a very large swimming crab, Ovalipes punctatus, $4\frac{1}{2}$ inches across the carapace. As I have a broken nipper off one even larger, it would be interesting to know just how big this species grows.

Two species of star-fish are moderately common around Kaikoura - the seven armed star, Astrostole scabra, and the attractive brooch star, Asterodon dilatatus. Four species of brittle stars are sometimes found under low tidal rocks - Ophioncreis fasciata, Pectinuragracilis, Ophiomyxa brevirostra and Ophiocoma bollensi. Occasionally found, are the reef star, Stichaster australis, the dividing stars, Allostichaster polyplax and A. insignis, the common cushion star Patricia regularis, and a single specimen of the rarer cushion star Stegnaster inflatus. This last one is a source of some frustration, as it lives 12 or 15 inches below low tide in a very narrow crevice, where I have seen it many times but have not been able to figure out a way of procuring it for my collection!

When I came to Kaikoura four years ago, I was impressed by the profusion of Sea slugs living around the Peninsula. Now, however, I very seldom see any. One rarity that I thought was going to be quite common here, is Lamellaria cerebroides. Within the first few months, I found four or five of these, the largest containing a beautiful shell 25mm. across, but since then, I have seen no more. Other Sea slugs seen here include the large brown Sea Hare Tethys brunnea, Bouvieria ornata, Archidoris wellingtonensis, Pleurobranchaea novaezealandiae, P.h.granulosa, Aphelodoris luctuosa, Dendrodoris citrina, Atagema carinata (one only), Acolidia gracilis, Acolidia leptosoma, and what may have been Phidiana militaris, discussed in a previous article - 'Poirieria', Vol.8, Pt.6, Pg.97.

Bivalves at Kaikoura are generally poor, both in size and variety, but one specimen, safe in the shelter of a kelp holdfast, grew to an exceptional size and remained in excellent condition. This was a Modiolus areolatus found washed up at South Bay in September 1977. (The drawing of the open valves is a little larger than natural size, due to the angle on which it is drawn but the other illustration is accurate.)

Kaikoura is an interesting place for birds. It is not easy to combine the two hobbies - to look down by your feet for shells, and at the same time to be looking away into the distance for birds. Expensive binoculars are quite a handicap when one wants to squeeze into an awkward crevice half full of surging sea water, to look for shells. The nesting colonies of Red Billed Gulls and White Fronted Terns on the Peninsula, are an attraction during November and December, likewise nesting Black Billed Gulls in the nearby Kowhai River. It was the numerous groups of Turnstones on the Peninsula (erroneously identified as Black Fronted Dotterals in a previous article - Poirieria Vol.8, Pt.6, Page 97) which first stimulated my interest in birds. They can be seen almost any time, even during the winter when they are supposed to have migrated to Siberia. Other migrants sometimes seen here are Asiatic Whimbrel and Siberian Tattler, while local residents include Cape Pigeons, Giant Petrels and vast flocks of Hutton's Shearwater. On nearby Lake Roroiti and Rotorua, the commoner birds include nesting colonies of Pied, Black and Little Shags, while the rarer birds seen there include Crested Grebe, Little Grebe and Marsh Crake.

Seals can always be seen on the Peninsula, ranging from a scattered few in the summer to many hundreds in the colder months. One can often approach very closely to these fascinating animals, but I found it does not pay to be too casual in their presence. There is always the occasional grumpy old male who is not going to give way to you, and you had better not argue with him for the right of way!! One day, among the ordinary dark brown seals, there was one which was a light golden-brown, with pinkish-brown nose, eyes and ears. Only once have I seen a Sea Leopard on the Peninsula, and twice, a small Sea Elephant. Last, but certainly not least, an enormous male Sea Elephant, 18 or 20 feet in length, and with a big bulbous nose. I always had a feeling I might bump into one while I was going along with my head down, looking for shells. Fortunately, on this occasion, I was going along with my head up, looking for birds, and so I saw him first - and what a magnificent sight he was.



LAMELLARIA CEREBROIDEA

EAST HEAD, AIKOURA PENINSULA. JUN 5 '71

NATURAL SIZE 25 X 18 MM



WAINUIA FALLAI

MT. FYFFE, KAIKOURA

NATURAL SIZE 39 X 29 MM

ITEMS of INTEREST

Paraphanta; Trevor Worthy writes -

"On looking at the literature I find that the 'rossiana' series has a patchy distribution through Southland and up the West Coast to reach its northernmost point on the Millerton Plateau north of Westport."

Last Christmas I was on the Spelaeological Society's Xmas expedition to Mt. Arthur. At 4000ft., just above the bushline in the headwaters of the Leslie River (above the Pearce River Resurgence) on the East slope of Mt. Arthur, I found two recently dead Paryphanta. These had strong colour radials and faint spiral striae on the dorsal surface. They were 34 and 36mm. in greatest diameter and have been identified as P.rossiana patrickensis. In the same locality, at a lower altitude, typical P.(Powelliaphanta) hochstetteri were found.

WELLINGTON'S INTRODUCED PULMONATES

R.C.Willan

I resided in Wellington for eleven months during 1979 and 1980. Over the last seven months of that time, I surveyed the distribution of the introduced pulmonates, both snails and slugs, around the city and suburbs. No similar surveys have been undertaken in the other major cities of New Zealand. One could expect differences between cities according to their location, size, patterns of development, climate and vegetation types. Wellington is a good starting place because the urban area is small, there are numerous suburbs, each separated by geographic barriers and the climate is (notoriously) wet and cool.

About 20 species of terrestrial pulmonates have been introduced to New Zealand; all are of European origin. Most are confined to disturbed areas of grassland. Nowadays so much of New Zealand has been converted to pasture, these habitats comprise the bulk of the country. And the cities and farms are still expanding. Only the introduced snail Cochlicopa lubrica and slug Arion intermedius seem capable of penetrating the indigenous forests and living alongside native species. The tiger slug (Limax maximus) is able to penetrate into bush remnants and forest margins. The accompanying figure illustrates all the species of snails and slugs I have found in Wellington. The identities of the slugs have recently been clarified by Barker (1979).

METHODS

This survey obtained information on species' presence and abundance. I usually visited gardens of friends (Table 1), to do my searching. One hour was spent hunting for snails and slugs. Usually, my friends did not object to the disruption, or rather destruction of their gardens but most were reluctant to actually look with me so this time represents one man hour's searching. Most locations examined were between 0.5 and 1.0 hectares in area.

All the slugs and snails located were collected, and they were counted at the end of the hour. A quantitative scale of abundance was applied so that the number found at any one site could be related to densities in other areas. The scale used is as follows;

| | | |
|----------------|---|-----------------------------|
| Abundant (A) | = | more than 50 found per hour |
| Common (C) | = | 25-49 |
| Frequent (F) | = | 10-24 |
| Occasional (O) | = | 5-9 |
| Rare (R) | = | Less than 4 found |

Representative specimens were preserved and have been deposited in the National Museum's molluscan collection.

RESULTS

Seven species of introduced pulmonates were found, three were snails and four were slugs. The species are listed below;

| | |
|---|---------------------|
| <u>Helix aspersa</u> (Müller, 1774) | Garden snail |
| <u>Helicella caperata</u> (Montagu, 1803) | Wrinkled snail |
| <u>Oxychilus cellarius</u> (Müller, 1774) | Cellar snail |
| <u>Arion intermedius</u> Normand, 1852 | Hedgehog slug |
| <u>Milax gagates</u> (Draparnaud, 1801) | Black keelback slug |
| <u>Deroceras panormitanum</u> (Lessona & Pollonera, 1882) | Small marsh slug |
| <u>Deroceras reticulatum</u> (Müller, 1774) | Netted slug |

TABLE 1 ; Locations sampled for introduced pulmonates. Localities are numbered from north to south.

| | | |
|----|--|---------------------|
| 1 | 8 Holston Rd., Paparangi, Johnsonville. | 12/4/80 |
| 2 | 34 Brooker Grove, Newlands. | 19/4/80 |
| 3 | 5 Imlay Crescent, Ngaio. | 8/6/80 |
| 4 | 52 Hobson Street, Thorndon | 7/6/80 |
| 5 | 177 Thorndon Quay, Thorndon. | 7/6/80 |
| 6 | 11 Fancourt Street, Karori. | 3/5/80 |
| 7 | Footpath beside Chinese Embassy, Kelburn | -/12/79 |
| 8 | 3 Konini Rd., Hataitai. | 22/3/80 and 13/4/80 |
| 9 | 56 Calibar Rd., Rongotai | 1/6/80 |
| 10 | 88 Sidlaw St., Strathmore. | 3/5/80 |
| 11 | 229 Marine Parade, Worser Bay, Seatoun. | 1/6/80 |
| 12 | Foreshore, rocks at western end of Houghton Bay. | 28/5/80 |
| 13 | Island Bay Marine Research Laboratory, | 1/6/80 |

TABLE 2; Density data for introduced pulmonates in areas surveyed at Wellington. X = species not found at that site.

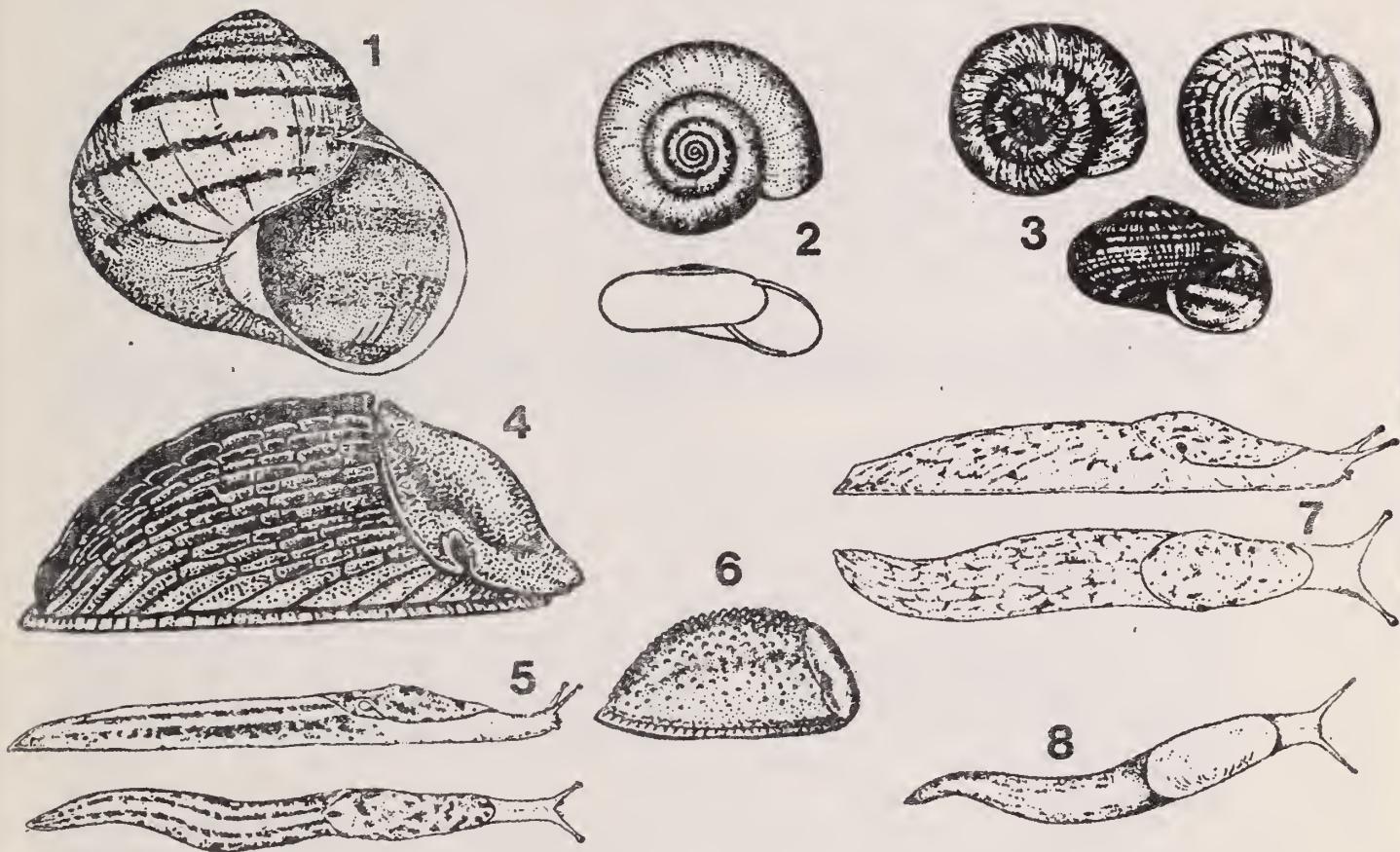
| Areas | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-------------------------------|----------|---|------------|------------|-----------------|--------|--------|--------|---|----|------|----|----|
| Species | | | | | | | | | | | | | |
| <i>Helix aspersa</i> | A | C | A | F | A | X | A | A | A | A | A | C. | A |
| <i>Helicella caperata</i> | X | X | X | X | X | X | X | X | C | X | O(5) | X | |
| <i>Oxychilus cellarius</i> | X | X | X R(2)R(1) | X | X | X | X | X | X | X | X | X | F |
| <i>Arion intermedius</i> | R(4)R(2) | X | C | X | X | X | X | A | X | X | X | X | X |
| <i>Milax gagates</i> | X | C | X | X O(6) | X O(8) | X | X | X | X | X | X | X | F |
| <i>Deroceras panormitanum</i> | X | X | X | X | C R(1) | A | C | A R(1) | A | X | C | | |
| <i>Deroceras reticulatum</i> | R(2) | X | X | X R(1)R(1) | F | C | X R(1) | X | X | X | X | X | |
| athoracophorids | R(4) | X | X | X | X R(1) R(2)O(5) | X R(2) | X | X | X | X | X | X | |

The densities of these pulmonates in the areas surveyed are given in Table 2. I have included the actual number found, in brackets where a species was designated as occasional or rare. I have also included data on the ~~occ~~ of native a thoracophorid slugs (probably Athoracophorus bitentaculatus) since they were frequently found in the same habitats as the introduced pulmonates.

DISCUSSION

Most of the species of introduced pulmonates found by me around Wellington are widespread throughout New Zealand (Helix aspersa, Oxychilus cellarius, Deroceras panormitanum, D. reticulatum, Arion intermedius and Milax gagates). Helicella caperata is patchily distributed in the North Island only, and then mainly in coastal locations. I did not find Limax maximus on this survey but the species does exist in Wellington as there are specimens in the National Museum from Naenae, Thorndon and Newtown. Barker(1979) has not included any Wellington locations for L. maximus, yet he does record Lehmannia flava. In the absence of specimens of Lehmannia flava from the Wellington region, in either this survey or the National Museum, I wonder if Barker misidentified Limax maximus as Lehmannia flava?

Wellington's Introduced Pulmonates.



FIGURES: 1 Helix aspersa (from Smith & Kershaw 1979)
2 Oxychilus cellarius (from Janus 1965)
3 Helicella caperata (from Janus 1965)
4 Milax gagates (from Janus 1965)
5 Limax maximus (from Barker 1979)
6 Arion intermedius (from Janus 1965)
7 Deroceras reticulatum (from Barker 1979)
8 Deroceras panormitanum (from Smith & Kershaw 1979)

Three introduced pulmonates that are common elsewhere in the North Island do not appear to be present yet in Wellington. They are the slug Arion hortensis, and the snails Cochlioopa lubrica and Tallonia excentrica. Neither did I find Lauria cylindracea nor Vertigo spp., both of which have been reported on one or two occasions from the Auckland province.

I was surprised at the paucity of species and individuals of these pulmonates. At no locality was every species present. Five was the greatest number of species found together (at Strathmore). The average number of species per locality was only 2.85. At the site at Ngaio, a thorough search of a likely garden by two investigators revealed only Helix aspersa. From my experience, it would appear that species diversity and density are higher in Auckland. By contrast, in Sydney recently, I found nine species of introduced pulmonates in one garden at Engadine; that was at the end of a warm wet autumn.

These were; Helix aspersa, Oxychilus alliarius, Vallonia pulchella, Cochlicella acuta, Milax gagates, Deroceras panormitanum, D. reticulatum, Limax maximus, Lehmarnia flava, and L. nyctelia.

To consider the distribution of the individual species of slugs and snails within Wellington itself, I have grouped my sampling sites into four general geographical areas. Sites 1 to 3 constitute the "northern suburbs", sites 4 to 7 constitute the "Central city" area; sites 8 to 11 constitute "Miramar Peninsula"; and sites 12 and 13 constitute the "south coast" suburbs. Helix aspersa was the most widespread and consistently found species, and it occurred in the greatest range of habitats. Helicella caperata occurred in patches on Miramar peninsula and the south coast. Oxychilus cellarius had a patchy distribution too, being found in the central city and south coast, but not in the northern suburbs or Miramar peninsula. Arion intermedius was present in the northern suburbs and Miramar Peninsula. Milax gagates was widespread, but never numerous; it was apparently absent from Miramar Peninsula. Deroceras panormitanum was ubiquitous, like H. aspersa but appeared to be absent from the northern suburbs. Deroceras reticulatum was widespread, and again never numerous, and was not found on the south coast. Native athonacophorid slugs were widespread; they probably do occur on the south coast in suitable habitats even though I did not find them there.

There is little doubt that the distribution of some of these species in Wellington is more extensive than that suggested by my survey. In fact, Helix aspersa, Deroceras panormitanum and D. reticulatum are probably ubiquitous.

My survey did reveal the tremendous importance of microhabitats in the distribution of the species. For example, consider the differences between two neighbouring sections of land. -

Site 4 was a mature, extensively planted garden; while site 5 was on the side of one of the city's busiest roads. It consisted of a wasteland of gravel, offcuts of wood, scraps of cardboard and fabric and herbicide-resistant weeds surrounding a factory. These two areas were contiguous and not

separated by any physical barriers. No slugs could be found at site 4, and Helix aspersa was classed as frequent. At site 5 three species of slugs were found and Helix aspersa was abundant. It would appear that the densities of these introduced pulmonates, and hence likelihood of the species being found, is more related to the type of microhabitat than the geographical location of the area. The first species to colonise very frequently disturbed rural, or newly-created urban habitats are Helix aspersa, Derooceras panormitanum, D. reticulatum, Limax gagates and probably Oxychilus cellarius. More stable areas with growing vegetation that is producing considerable shade, are likely to suit Arion intermedius, Limax maximus and Oxychilus cellarius as well as Helix aspersa, Derooceras panormitanum and D. reticulatum. Mature sections of areas of land covered by scrub and reverting to forest, appear inimical to most of these "tramp" species (although Helix aspersa persists) and favour instead re-establishment of indigenous pulmonates (particularly athonacophids).

It is pleasing to note the presence of these native slugs. I found athonacophorids in man-modified habitats (even in established gardens right in the centre of the city). However, they do require shade, moisture and undisturbed decaying wood. On several occasions I found species of small, native snails (endodontids) as well, in similar, and sometimes more disturbed, habitats, showing that they too are persisting successfully in Wellington city.

ACKNOWLEDGMENTS

Most people were only too willing to invite me into their gardens to rid them of slugs and snails. To these friends I am most grateful; Dr. F. M. C. Smith, Mr. C. Paulin; Mr. J. Paynter; Dr. J. R. Richardson; Mrs. P. Stonham; Mr. M. Wicks.

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SMITH, B.J. & R.C. KERSHAW. 1979. Field Guide to the Non-Marine Molluscs of South Eastern Australia. Australian National University Press, Canberra. 285pp.

ITEMS of INTEREST

E.N.Gardner ; - The Cook Islands, lying as they do towards the outer edge of the eastern distributional range of many Indo Pacific molluscs, has a somewhat megre fauna, but a few species occur in large colonies e.g. Echithium asper, Strombus gibberulus and S. mutabilis. Hermit crabs make good use of the empty shells and miriads of these species housing attractive red and white hermits, were seen congregating under stones between tides on Aitutaki. Locally, Cypraea annulus ~~dividens~~, characteristic of the area, was quite common and there were numbers of Corus miliaris, Dryma grossularia, Tectarius grandis, ^{latus?} Engina siderea (Reeve), usually an uncommon shell, was plentiful on Rarotonga.)

One species of Patella was seen on Aitutaki, Patella flexuosa Q & G., living on rugged mid tidal rocks. With the molluscs seated neatly down, often half an inch below the surrounding rock surface, it was quite difficult to remove a specimen intact, but where the animal had been in contact with the rocky surface, a smooth pale greenish area was left. As most limpets forage for food, these must have had a rather rough passage if they attempted to go far from their own particular 'home', even though the surrounding water would give some bouyancy. It would seem that these specimens might just raise themselves up when the tide covered them and obtain small amounts of algae from the water.

Night collecting in the Tropics is often full of surprises and even a walk along the sandy coast one evening, proved quite interesting. Mid tidal rocks which, during daylight harboured little besides Nerita plicata, had numbers of large mottled, grey Nerita polita perched up on top and around the bases. All the shells had a little cap of sand on top, just as we had seen them in Queensland, but there it was a common and variously coloured shell among rocks in broad daylight. The shells of two Pyramadellids, Otopleura mitralis (A.Adams) and Pyramidella sulcata (A.Adams), were washed up along the tideline near the Motel, but it was only at night they could be found crawling on the sand-flat at low tide. The Otopleura were in pairs - male and female perhaps?. Both these molluscs have no radula and feed by sucking the juices of marine creatures, probably worms, in this case.

A few slim black and white sea snakes were seen during the day and when disturbed in shallow water, shot into the sandy mud and wriggled along just beneath the surface leaving a trail, so we thought twice before investigating the ends of any likely looking trails at night.

The most plentiful mollusc living on the local reef was Trochus niloticus in all stages of growth. Over ten years ago two 40 gallon drums of this species had been brought over from Fiji Is. and released onto the reefs. While we were there, some local families had made the first harvest of adult shells and had to remove the animals and clean all growths off the shells - quite an undertaking! First class shells were to bring \$00 dollars a tonne,

and the villagers aimed at dealing with 30 tonnes. The adult shells in this area were heavily encrusted with a lime deposit which had to be chipped off with a hammer and chisel, but amazingly enough, it usually came off in chunks, leaving a perfect shell beneath. On the opposite side of the main island the shells did not seem to be of quite such high quality, as the spires of many shells had been bored by borers.

Many, very young specimens of Trochus niloticus were seen under stones on the reefs of the small islands (Motus), which dotted the outer reef of the large and beautiful lagoon at Aitutaki. The few large specimens that we saw had fine clean shells covered with light brown periostracum which gave good protection to the bright pink and white layer of shell beneath it.

Hamish Spencer; "Schizoglossa from Great Barrier Island!"

In the third week of November 1980, I made a short visit to Whangaparapara on the west coast of Great Barrier Id., and made several searches for land snails. The 'bush' around Whangaparapara has been severely modified, firstly, by the logging of all the Kauri and since then by goats which have eaten much of the regenerating vegetation. The resulting lack of undergrowth allows the wind to blow straight through the bush, even some distance inland and up valleys. It is thus very dry - not the best for snails.

However, in places where it was damp, under logs and in fallen Nikau fronds, I did find some snails. Surprisingly, one of the commonest was Schizoglossa novoseelandica barrierensis Powell, the carnivorous paua slug endemic to Great Barrier. Usually, Schizoglossa does not occur in any great numbers where it is found - perhaps the more open bush suits it better? It is also unusual to find a carnivore so common, when its supposed prey, other snails, is less common than usual. The individuals showed a great range in size - shell size ranged from 5mm. to 20mm., the latter with a 50mm. animal when extended. One specimen was noted with a group of 7 or 8 white eggs under a fallen ponga. The shells of dead animals often got stuck under clumps of a cutty grass, Gahnia, so it was not necessary to take any living animals.

One question that arises is, 'why should barrierensis be a subspecies of S. novoseelandica rather than the geographically closer S. worthyae? (see Gardner, 1977, for a map showing their distributions). Great Barrier Id. and the Coromandel Peninsula were once linked and it is S. worthyae which occurs on the Coramandels, not S. novoseelandica.

Reference; Gardner, N.G. 1977 - 'Schizoglossa - Our Paua Slug', "Poirieria" Vol. 8, Part 6, pp 112-114.

S. worthyae

Coromandel Peninsula - 13mm.

S. n. barrierensis

Wganganaparapara - 18mm.

S. n. novoseelandica

Waikato - 12mm.



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